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UTILIZING THE SOCIAL ECOLOGICAL MODEL TO ADDRESS DRINKING
BEHAVIORS AMONG COLLEGE STUDENTS PARTICIPATING IN NCAA
DIVISION I NON-REVENUE GENERATING SPORTS

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Education in the
College of Education
at the University of Kentucky

By
Andrew McCowan Smith

Lexington, Kentucky

Director: Dr. Kelly Bradley, Professor of Educational Policy Studies and Evaluation

Lexington, Kentucky

2017

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ABSTRACT OF DISSERTATION

UTILIZING THE SOCIAL ECOLOGICAL MODEL TO ADDRESS DRINKING BEHAVIORS AMONG COLLEGE STUDENTS PARTICIPATING IN NCAA DIVISION I NON-REVENUE GENERATING SPORTS

College students between the ages of 18 and 24 are considered high-risk for alcohol-related negative consequences due to drinking at high-risk levels (Barry, Howell & Salaga, 2015). Within that population, varsity student athletes are considered at even greater risk for those issues (Druckman, 2015; Wechsler, 2002).

With football and men's basketball being considered the only revenue-generating NCAA Division I sports, non-revenue-generating sports consist of the majority of student athletes (NCAA, 2016). This study is designed to examine high-risk drinking as well as alcohol-related consequences among non-revenue-generating student athletes attending a National Collegiate Athletic Association (NCAA) Division I school.

The sample population for this study attends a large, Power 5 Conference, NCAA Division I institution located in the United States. Of the sample, there are 228 respondents representing the majority of non-revenue-generating sports and nearly 68% of the total population of student athletes who participated in non-revenue-generating sports. Utilizing the Athletic Identification Measurement Scale (AIMS), the Identification of Psychological Group scale (IDPG), and the Harvard College Alcohol Study (Wechsler, 2002), this study identifies factors that may associate with high-risk drinking and alcohol-related consequences set within the framework of the Social Ecological Model of Prevention (Brewer Van Raalte & Linder, 1993).

Through descriptive statistics and basic correlation methods, the study examines the role of factors in four of the five levels of the Social Ecological Model of Prevention (individual, relationship, organizational, and community—public policy is not used for this study) as compared to high-risk drinking and alcohol-related negative consequences. The findings of this study indicate that this population experiences negative consequences in greater volume than respondents to the College Alcohol Study (Wechsler, 2002) and the NCAA Alcohol Study (2014), which may imply that non-revenue-generating student athletes are at a higher risk than revenue-generating athletes. Additionally, teams with the

most dissonance regarding the team alcohol policy are more likely to experience alcohol-related negative consequences. Teams that are consistent in their understanding of the team alcohol policy experience fewer alcohol-related negative consequences, regardless of the overall levels of high-risk drinking.

KEYWORDS: social ecological model, student athlete, athletic identity, social identity, alcohol behaviors

Andrew M. Smith

1 August 2017
Date

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“If you can dream—and not make dreams your master;
If you can think—and not make thoughts your aim;
If you can meet with Triumph and Disaster
And treat those two impostors just the same”

- Excerpt from Rudyard Kipling’s “If”

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Chapter 1: Introduction

This study examined high-risk drinking as well as alcohol-related consequences through the lens of social (or group) identity among non-revenue-generating student athletes attending a National Collegiate Athletic Association (NCAA) Division I school. Since studies began comparing the two cohorts, college-student athletes have consumed alcohol in greater quantity and have experienced the associated negative consequences at a higher frequency than their non-athlete peers have (Druckman, 2015; Wechsler, 2002). Most student athletes in NCAA Division I programs participate in sports that are considered non-revenue generating (NCAA, 2016).

Factors reviewed in conjunction with high-risk behaviors included demographic information, identity (student identity versus athletic identity), and environmental factors that are most common—if not specific—to the student-athlete experience. The factors studied were chosen based on the subscales of drinking motives outlined in the DMQ-R (Cooper, 1994), which are Social, Enhancement, Coping, and Conformity. These factors or motives assisted in the understanding of why student athletes put themselves in high-risk situations regarding alcohol despite knowing the potential harms (Doumas & Midgett, 2015). The environmental factors were placed into the appropriate categories within the Social Ecological Model of Prevention (Brofenbrenner, 1979). The Social Ecological Model of Prevention (SEMP) focuses upon how the interrelationships among individual, community, and environment can influence a particular behavior. In this case, the behavior reviewed is high-risk drinking among a particular population.

The National Institute on Alcohol Abuse and Alcoholism (2015) defines “high-risk drinking” as five or more servings of alcohol for men or four or more for women within a

two-hour period. In practice, this study's findings can assist in the development of well-being among student athletes by providing college and athletic administrators the baseline information on which to best address high-risk drinking and alcohol-related consequences. The study will discuss this goal in Chapter 1 by identifying the problem of practice, describing the significance of the study and theoretical framework, and stating the research questions.

Background

College-student athletes experience a unique set of stressors, particularly the balance of athletic and academic achievement and social isolation due to commitment to sports (Gayles, 2015). Such commitment and isolation can lead to an imbalanced identity, with a greater emphasis on athletic identity. This can lead to potentially harmful outcomes such as decreased academic or collegiate success. Without proper prevention or intervention, these stressors may negatively impact mental and physical well-being (Kelly & Dixon, 2014).

Alcohol use and college students. While the typical student athlete is more likely to experience alcohol-related consequences than non-athlete peers (Doumas, 2013), the typical college student is at high risk for developing alcohol-related issues (Ford, 2007; Fuertes & Hoffman, 2016). National studies on collegiate alcohol use indicate that high-risk drinking has become a crucial public health problem negatively impacting academic success, safety, and the social development of college students (Druckman, Gill, Klar & Robinson, 2015; Ford, 2007; Wechsler et al, 2002). A 2016 (Fuertes & Hoffman) study of college students' alcohol use across two universities (a "dry" alcohol policy urban campus and a "wet" alcohol policy rural campus) found that 85% of participants reported

alcohol dependence (severe alcohol abuse disorder in DSM-V), 43% reported alcohol abuse (moderate alcohol abuse in DSM-V), and 68% reported problematic drinking (mild alcohol abuse in DSM-V).

Further, the rates of direct dangers (e.g., death, injury) and associated dangers (e.g., comorbidity of other health related issues and diseases) pertaining to high-risk drinking among college students between the ages of 18 and 24 have risen progressively over the past 15 years (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2002; 2007; 2015). According to the NIAAA's most recent data (2015), researchers estimate that, on an annual basis, there are roughly 1,825 alcohol-related deaths due to unintentional injuries, 696,000 assaults committed by someone who has been drinking, and 97,000 instances of alcohol-related sexual assault or rape among college students between the ages of 18 and 24.

The harms associated with high-risk drinking can also negatively impact those who abstain from drinking. The 2010 Core Alcohol and Drug National Survey of nearly 57,000 college students found that 8% of non-drinkers felt unsafe on their college campuses, compared to their drinking counterparts at 6% (Walter & Kowalczyk, 2012). In 2014, the Core report combined the survey data from 2011–2013, creating a sample population of over 114,000 college student respondents. By this time, 8% of the entire population felt unsafe on their respective campuses.

The existence of varsity athletic programs can increase high-risk-drinking rates among students due to the higher-risk behavioral tendencies of student athletes (Doumas, 2015) and the drinking culture that tends to surround athletic events (Hustad et al., 2014; Moser, Pearson, Hustad & Bosari, 2014). Though the information found in the results of

this study represents a substantial portion of the student-athlete population, Druckman et al. (2015) argued that self-reports among student-athletes do not accurately reflect the behaviors. Factors, such as the information-gathering method and whether the athletic administrators were present during the assessment, have the potential to impact student-athlete responses.

College-student athletes are not immune to the issues that plague the general population. Along with first-year students, military-connected students, and those involved with Greek Letter Organizations, student athletes have been identified as a high-risk subgroup among an already high-risk population (Herberman, Fullerton, Ng & Ursano., 2014; Ford, 2007; Lewis, 2008; NIAAA, 2007). In addition, multiple studies have shown that student athletes tend to drink alcohol at higher rates than their non-athlete peers (Wyrick et al., 2016) and experience a higher rate of alcohol-related consequences (Doumas, 2015; Ford, 2007).

Differences in student-athlete drinking. Alcohol consumption rates are generally higher for student athletes when compared to their non-athlete counterparts, regardless of the type of college or university. In one of the more recent studies comparing the cohorts, however, Yusko, Buckman, White and Pandina, (2008) found a variance between comparisons based on gender, with male athletes drinking more in the past month than their non-athlete counterparts (85.4% to 83%) and female athletes drinking less than their non-athlete peers (76.6% to 79.7%). Male student athletes reported a significantly higher rate of binge drinking over the past two weeks than their non-athlete counterparts reported (71.4% to 59.1%). A study on alcohol use in athletes and non-athletes attending Christian-based colleges found that the student athletes attending these institutions engaged in high-

risk drinking almost as frequently as the student athletes attending secular schools (Frye, Allen & Drinnon, 2010). The drinking behaviors and patterns of college-student athletes have little variance regardless of the type of institution they attend.

The issues surrounding student athletes and alcohol have received the attention of the National Collegiate Athletic Association (NCAA). In 2013, the NCAA commissioned studies on student-athlete alcohol use to help reduce high-risk drinking and alcohol-related consequences. The resulting 2014 study found that reported rates of drinking had decreased for both males and females since 2005, dropping from 63% to 44% and from 41% to 33%, respectively (NCAA, 2016). The NCAA's 2014 report found that student athletes in men's lacrosse revealed the highest rates of substance use, including alcohol, and that student athletes in men's basketball revealed lower rates of substance use than other student athletes (NCAA, 2016). While these studies included numbers according to self-reported survey responses, they did not adequately express why certain teams may be more prone to high-risk drinking behaviors.

Revenue generating versus non-revenue generating. A 2007 study (Potuto & O'Hanlon) on the experiences of NCAA student athletes found minimal difference in satisfaction with the collegiate experience between students participating in revenue-generating sports and those participating in non-revenue-generating sports. The only pointed difference was between students attending NCAA Division I schools and those attending other division schools, the former indicating a lesser quality of education. A clear difference exists between the revenue-generating and non-revenue-generating sports within NCAA Division I athletic programs, which specifically revolve around financial and gender differences (Besser, 2016).

According to the NCAA's (2016) most recent numbers, of the 79,159 male Division I athletes, 33,588 (42%) have participated in revenue-generating sports programs. None of the 84,135 female Division I athletic programs is considered to be revenue generating. Though student athletes in non-revenue-generating sports comprise of the majority of athletes participating in NCAA Division I sports, there is a significant difference in the level of public attention and resources provided to those sports when compared to the revenue-generating sports.

Problem of Practice

Recent studies on college-student athletes and alcohol use have primarily focused on either NCAA Division III athletes (due to high rates of self-reported substance use in the NCAA 2014 study) or NCAA Division I student athletes, inclusive of revenue-generating sports. The rates of drinking among Division III athletes have been identified as an issue among the NCAA and college administrators to the point that a national study was performed on alcohol consumption among this population (NCAA, 2012; 2014). However, the behaviors and experiences specifically pertaining to non-revenue-generating athletes in NCAA Division I have primarily been ignored. But notably, this population comprises a significant percentage of the overall student-athlete population, and studies have historically found the highest-risk sports reside in this group (NCAA, 2014; Wechsler, 2002). In the NCAA 2005 and 2014 reports, both men's basketball (58.1%) and football (70.9%) reported lower alcohol usage in the past 12-month than all other sports except for wrestling (64.5%) and women's basketball (65.8%).

In discussing potential negative consequences associated with alcohol, sexual assault and hazing must be included. Entire non-revenue-generating teams have recently

experienced disciplinary, season-long suspension or elimination due to these concerns, such as the 2015 Western Kentucky University swimming and diving team (*Craig v. Western Kentucky University*, 2015; Highland, 2015) and the 2013 Cornell University men's lacrosse team (Novy-Williams, 2013). In both cases, alcohol played a significant role in the facilitation of the alleged actions of the student-athlete respondents.

An underlying factor among many cases of hazing and Title IX infractions has been the role of alcohol. Drinking motives among student athletes fixate primarily upon "team bonding." Research on the role of alcohol and team cohesion found a positive correlation between the prevalence of high-risk drinking as a team activity and the increase in perceived team cohesion (Graham, 2015). Students who wish to feel associated with the team and not treated as outsiders may feel compelled to drink, participate in drinking games, or drink at high rates, even if that perception is not a reality (Doumas & Midgett, 2015). To better understand the role of alcohol in each team, this study reviewed student athletes' perceptions of team alcohol policies and the associated drinking behaviors and alcohol-related negative consequences.

Purpose of the Study

The purpose of this study was to assist health promotion practitioners by examining through the lens of social identity high-risk drinking as well as alcohol-related consequences among non-revenue-generating student athletes attending a Division I school. This study may help administrators identify and recognize which types of individual, cultural, and environmental factors are perceived (or reported) to impact high-risk drinking behaviors of student athletes participating in non-revenue-generating sports.

These factors operate within the framework of the Social–Ecological Model of Prevention (Brewer et al., 1993) levels: individual (intrapersonal), relationship (interpersonal), organizational, community (societal), and public policy. This model is the primary framework in which public behavioral health professionals address public health issues. The framework utilizes the influence that different levels of interaction (and identity) have on an individual’s decisions regarding health behavior. In this study, Identity and typical demographics focused primarily on the individual level. The perceived contribution and primary sport of identification reflected the relationship level. Team success, team alcohol policy, person communicating the alcohol policy, and person enforcing the alcohol policy reflected the organizational level. Community was measured through the student athletes’ involvement in the other high-risk organizations of Greek Letter Organizations and the military. Due to the broad scope of the public policy level, which particularly focuses on local, statewide, and national policy development, this level was not utilized in the study.

Theoretical framework.

This study is framed in the Social Ecological Model of Prevention (McLeroy, Steckler & Bibeau, 1988) which is a set of theoretical principles for understanding the dynamic interrelations among various personal and environmental factors. This model is one of the primary methods of prevention and health behavior modification, focusing on the interplay between the levels of intrapersonal (individual), interpersonal (relationship), organizational, community (societal), and public policy. For the sake of this study, the levels will be referred to as individual, relationship, organizational, community, and public policy.

In this study, the individual focused on a person's biological and personal history that factors into potential for high-risk drinking or the development of an alcohol use disorder, as categorized by the DSM-V. Relationship is the second level, which focused on close relationships that may have increased the likelihood of high-risk drinking or the development of an alcohol use disorder. The third level, organizational, identified the settings and how the policies and rules established by the community could have impacted high-risk drinking. The fourth was community, which looked into broader levels of social and cultural norms that supported and promoted alcohol use, particularly how organizations interacted with one another. The fifth and final model, public policy, focused on the impact of local, state, and national policies and laws that regulate or support healthy behaviors (McLeroy et al., 1988).

The management of environmental factors that play a role in student athletes' high-risk drinking behaviors also carries importance. Therefore, the study investigated if there were any significant associations among alcohol-related consequences and high-risk drinking as each pertained to the student athlete's sport, perceived in-season team alcohol policies, and reported alcohol-related consequences.

Research Design Overview

The site for this study is was a large public institution belonging to an NCAA Division I Power 5 conference. It has also been considered one of the *Princeton Review's* "Top Party Schools" in the nation for well over a decade and has many proud traditions that heavily involve high-risk drinking. The administration as well as the athletics department has had national recognition for its stance on addressing alcohol use among

students and guests of the university, particularly concerning its progressive tailgate policy and the provision of alcohol during sporting events.

The study collected alcohol-focused data using a combination of questions from the Rutgers Alcohol Problems Index and the Harvard College Alcohol Study, focusing specifically on alcohol-related problems. The Athletic Identity Measurement Scale (AIMS; Brewer & Cornelius, 2001) and the Identification with a Psychological Group (IDPG; Mael, 1988) scale were utilized to measure the level of athlete identity and student identity, respectively. This was a non-experimental study using data specifically geared for researching high-risk drinking behaviors and consequences among college-student athletes, particularly relating to environmental factors including identity.

Of the sample population, there were 228 respondents. Of the 228, there was a fairly even distribution of classification by year. The sample included 111 male and 117 female student athletes. Additionally, the racial and ethnic identities included 24 Black (non-Hispanic), 184 White (non-Hispanic), 7 Hispanic or Latino/a, 2 Asian/Pacific Islander, 1 Native American, 7 Multi-racial, and 3 who preferred not to answer. With the majority of the athletes in non-revenue-generating sports responding to the survey and 110 non-respondents, this study was granted a 67.5% response rate.

The study utilized descriptive methods of quantitative analysis to determine rates of high-risk drinking and alcohol-related consequences based upon specific variables that represented levels of the Social–Ecological Model. Univariate analysis was used to determine frequency distribution and central tendencies. Basic correlational models of Chi-Square and Somers' d were used to determine if significance exists between the in-

season team policy, sport membership, and high-risk drinking as well as alcohol-related consequences.

Research Questions

Research Question 1: *To what extent do high-risk drinking behaviors and alcohol-related consequences exist among this institution's student athletes who participate in non-revenue-generating sports?*

Research Question 2: *To what extent do factors representing each level of the Social Ecological Model of Prevention (individual, relationship, organizational, and community) exist within this institution's student athletes who participate in non-revenue-generating sports?*

Research Question 3: *To what extent does the perception of team policy fit with high-risk drinking and alcohol-related consequences within the non-revenue-generating sport teams?*

Limitations

The limitations of this study were primarily due to its reliance on self-reporting of behaviors that may be perceived as counter to the federal and state laws or institutional policies. A study by Saw, Main, and Gastin (2015) found that, for self-reported measurements of student athletes to be most accurate, certain factors must be present such as individual buy-in, group buy-in, and data security. Consistent with the Social Ecological framework, the topic of the subject must be considered important or relevant to the respondent at an individual level. As a group, there must be organizational buy-in so that peers can effectively influence each other to provide accurate responses. Uncertainty of data security, which could potentially identify punishable behaviors listed in the survey,

are also a concern, which pertains to the level of trust and the potential for discipline that is reflected by the coach-athlete relationship (Saw, Main, & Gastin, 2015). As this study was performed by an outside entity, none of the factors outlined by Saw, Main & Gastin were necessarily present in the sample population. The absence of these factors was mitigated by the role of graduate assistants within the athletic department serving as the deliverers and collectors of the actual survey. Their involvement potentially provided the student athletes with a sense of familiarity but not an abundance of authority.

Other limitations included considerations related to purposeful sampling and lack of ethnic diversity due to the types of sports sampled, but this was to be expected. Generally, the non-revenue-generating sports are less diverse than the revenue-generating sports of men's basketball and football. Harper, Williams, and Horatio (2013) found large gaps in racial and ethnic representation in the NCAA institutions that qualify for the Football Bowl Subdivision. According to their study, Black men "made up for 2.8% of full-time, degree-seeking undergraduate students at the 76 institutions, but 57.1% of football team members and 64.3% of male basketball players" (p. 1).

Due to how the survey for this study was administered to teams through the athletic department via graduate students and at the coaches' discretion, the data set is missing entire teams. However, the teams that reported provided on average a response rate of 86%. The teams that did not respond and that, therefore, were not represented in the survey were women's cross country, women's tennis, men's golf, women's track and field, and volleyball. It should be noted that the coaching staff for the women's cross country team and track and field team are led by the same head and assistant coaches. Also, despite missing responses from three women's teams and one men's team, most of the respondents

were female. This may be because the revenue-generating teams are both male and make up a large portion of the student-athlete population, especially the football team.

Definitions of Terminology

High-risk drinking: According to the National Institute on Alcohol Abuse and Alcoholism (2015), this “typically occurs after 4 drinks for women and 5 drinks for men – in about 2 hours.”

Student athlete: According to 15 USCS 7801 (9), this is “an individual who engages in, is eligible to engage in, or may be eligible in the future to engage in, any intercollegiate sport.”

Non-revenue generating: This is defined as all “sports outside of NCAA Men’s Division I basketball and FBS football” (Besser, 2016).

Significance of the Study

This study will inform collegiate athletic administrators and general administrators on the issues surrounding reported high-risk drinking of student athletes participating in non-revenue-generating sports, as well as provide assistance in utilizing the SEMP as their framework. These sports, while not typically at the forefront of a university’s public relations, generally comprise the majority of the student athletes representing the university and athletic department. This research utilized individual and environmental factors related to high-risk drinking and alcohol-related consequences including athletic and student identity level, type of sport, perceived team alcohol policy, enforcement of team alcohol policy, and perceived contribution to the team. These variables were relevant as they may assist with the improvement of well-being while addressing an organizational culture that may promote high-risk drinking behaviors.

Summary and Organization of the Study

This study focused on high-risk drinking and alcohol-related consequences as they relate to levels outlined in the Social Ecological Model. The rationale for the study was provided earlier in this chapter. Definitions of terminology, the statement of the problem, purpose of the study, and the research questions for the study were also presented. Chapter 2, consists of a review of the literature, including a review of alcohol's impact on the college-student experience, the effectiveness of different types of student-athlete alcohol policies, a review of the Social Identity Theory, and an in-depth history of the Social Ecological Model. Chapter 3 provides the description of the study's methodology, including the instrumentation, procedures, and data analysis procedures. Chapter 4 contains the results of the study, which analyze and discuss the implications of the results in Chapter 5, along with the specific implications for the athletic department staff and administrators at the site institution.

Chapter 2: Review of the Literature

There is a dearth of research that focuses primarily on the experiences of non-revenue-generating college athletes, regardless of the subject at hand. In recent years, differences between revenue-generating college sports and non-revenue-generating sports have been highlighted due to the *O'Bannon v. NCAA* case (2014; Lush, 2015) and the ongoing dialogues regarding “amateurism,” the Sherman Act, and student-athlete compensation. This limited amount of research is despite the fact that non-revenue-generating student athletes represent 79.4% of over 163,000 Division I student athletes in the 2016–2017 academic year (NCAA, 2016).

College Students and Alcohol Use

Every year, college students between the ages of 18 and 24 account for 1,825 deaths, 696,000 assaults, and over 97,000 reported sexual assaults in which alcohol was used prior to harm (NIAAA, 2015). Among those in the 18–24 age range in the United States, college students are more likely to drink at a high-risk frequency and experience negative consequences, such as driving under the influence, than their peers who do not attend college (Carter, 2010; Substance Abuse and Mental Health Services Administration [SAMHSA], 2014). Some believe this discrepancy exists due to the relatively unstructured time, accepting culture, and ease in alcohol accessibility for those who attend college (NIAAA, 2015). College students who are employed have been shown to experience fewer instances of binge drinking; more hours worked makes binge drinking less likely (Carter, 2010; Leppel, 2006).

Underage drinking is not uncommon behavior among adolescents and college students. The “Monitoring the Future” (2016) national survey reported that 7% of 8th

graders, 20% of 10th graders, and 33% of 12th graders have drunk in the past 30 days. However, drinking in high school is an indicator of high-risk drinking patterns in college. The National Survey on Drug Use and Health (2016) found that youth who started drinking before age 15 were six times more likely to develop alcohol dependence than their peers who began drinking at or after the age of 21 years.

Regardless of status as a student athlete or a non-athlete, alcohol tends to be utilized as a method of bonding to increase cohesion among the group. According to a case study on the role of alcohol and team cohesion (Graham, 2015), junior and senior student athletes participate in high-risk drinking more frequently than sophomore and freshmen student athletes.

Societal focus on the social settings of the collegiate experience can potentially have a negative effect on students' behaviors, especially those who do not excel academically. According to Jessor (1987), there are certain psychosocial characteristics among adolescents (defined as ages ranging from 13 to 19) who are more likely to become prone to binge drinking and alcohol-related consequences. These characteristics include lower value on academic recognition, lower expectation for academic recognition, greater attitudinal tolerance toward deviance, and greater approval for problem behavior. This is important because of the role that group environment plays in the development of certain behaviors. Group mentality in combination with fan identity can produce hazardous drinking environments for college students attending sporting events.

Additionally, colleges and universities that have certain characteristics tend to experience greater rates of high-risk drinking in students. These characteristics include possessing a fraternity and sorority (Greek letter) system, being a 4-year institution, and

placing a heavy emphasis on athletics (NIAAA, 2007). The relationship between college sporting events and alcohol consumption is high, though it is most closely associated with tailgating before college football games (Hustad et al., 2014). The activity of tailgating is considered to be the culmination of events that occur in the general vicinity of the football stadium in the hours before, during, and after games, though most activities occur before the game (Glassman, Miller, Miller, Wohlwend & Reindl, 2012). In studies on college students between the ages of 18 and 24 (Glassman et al., 2012), 50.8% of respondents drink during football game day, with most participants spending 2.5 hours drinking. One in five respondents reported spending more than 5 hours drinking. According to a study on student drinking at college sports events (Nelson, Lenk, Ziming & Wechsler., 2010), college-student athletes and sports fans are more likely to report drinking at a sports event than those who are neither athletes nor fans.

Colleges and alcohol policy development. Colleges and universities across the nation have utilized myriad methods of intervention, prevention, and education to decrease underage drinking and dangerous drinking patterns. Some institutions introduce policies to curb student alcohol consumption (Taylor, Johnson, Voas & Turrisi., 2006). Campuses with “wet” policies allow the legal consumption of alcohol on university-owned property and at times even allow the sale of alcohol on campus by institutionally contracted vendors. A “dry” policy prohibits the possession or consumption of alcohol on university-owned property regardless of a person’s age (Taylor, 2006).

Results from a study by Walter and Kowalczyk (2012) indicated that students on wet campuses binge drink at higher rates relative to students on dry campuses. The study also found that students at dry campuses reported fewer secondhand effects of alcohol

consumption such as being insulted or assaulted. Research from this study, as well as by Taylor et al. (2006), has suggested that, despite these differences, campus alcohol policies may limit drinking on campus property but do not prevent off-campus alcohol consumption or dangerous drinking patterns for the “high-risk” groups identified by the NIAAA: Caucasians, males, athletes, or those involved in Greek Letter Organizations.

Universities also have policies in place during high fan-yield sporting events such as football and basketball. During these events, a cultural expectation has developed in which copious amounts of alcohol are consumed. Colleges are required by the NCAA to have game management policies for hosting events with thousands of spectators in the safest manner possible. For example, the Southeastern Conference’s Game Management Policy states, “no alcoholic beverages shall be sold...for public or private consumption anywhere in the facility. Furthermore, the...consumption of alcoholic beverages in the public areas of the facility shall be prohibited...These issues shall not apply for private, leased areas in the facility or other areas designated by the SEC” (Baus, 2009). This does not extend to the areas surrounding the stadium that are owned by the institutions.

The Oster-Aagland and Neighbors (2007) study focused on tailgating policy and its impact on students’ drinking behaviors and attitudes. This study followed the results of a university’s alcohol policy change from “dry” to “wet.” This change in policy did not result in change in quantities consumed or prevalence of problems. There was, however, a noticeable increase in student misperceptions, with students overestimating the number of their peers who drank while tailgating (Oster-Aaland & Neighbors, 2007).

Campuses throughout the nation have worked to address dangerous drinking behaviors among their students and athletic fans through policy development. In 2011,

West Virginia University approved a policy permitting the sale of alcoholic beverages at their football stadium. According to Novy-Williams (2011), the WVU Athletics Director at the time reviewed the data provided by the WVU Police Department and compared them to game-day statistics during the previous year. The director found that there was not only an approximately \$700,000 increase in generated revenue but also fewer instances of alcohol-related trouble. Since then, there has been a call for increased review of the impact of alcohol sales within NCAA Division I football stadiums (Barry, Howell, & Salaga, 2015). The relationship between college sports and alcohol remains precarious.

Student Athletes and Alcohol

College-student athletes are identified as one of the “high-risk” populations among college students (Nelson & Wechsler, 2001). This has not always been the case in research as early studies in college students’ alcohol use cited participation in athletics as a deterrent from alcohol-related problems (Strauss & Bacon, 1953). However, as the trend began to change and research on the subject began to boom in the late 1990s, studies began to identify specific college sports and their characteristics that made them at greater risk for dangerous drinking than other sports (Brenner & Swanik, 2007; Ford, 2007; Massengale, Ma, Rulison, Milroy & Wyrick, 2017).

In addition to experiencing more alcohol-related problems, college athletes report drinking more frequently and consuming more per occasion than their non-athlete peers report (Nelson & Wechsler, 2001). Some research has even shown that the more a student participates in sports, the more likely the student is to consume alcohol (Mastroleo, Marzell, Turrisi & Borsari, 2012; Leichter, Meilman, Presley & Cashin, 1998.). Further,

high school and college athletes are more likely to begin drinking at earlier ages (Druckman, 2015).

Research conducted on why college student-athletes drink more than their peers has found various points of rationale. Damm & Murray (1996) posited that athletes drink to for conformity and for an increase in social capital. Additionally, further studies have identified social purposes such as drinking to feel good or drinking to deal with the stress of athletics and academics as the primary reasons for alcohol use (Turrissi, Mallett, & Mastroleo, 2006). The Athlete Drinking Scale (Martens & Martin, 2010) divides drinking motives for student-athletes into three subcategories: Positive Reinforcement, Team/Group (culture), and Sport-Related Coping.

Student athletes and violence. The negative attitudes and behaviors associated with athletes are not exclusive to college, and they are not bred only in college environments (Thomas, 2014). Research has shown that high-school athletes report greater alcohol use, more sexual partners, and lower perceived risk of risky behavior than their non-athlete peers (Sonderlund et al., 2013; Wetherill & Fromme, 2007). Male high school athletes are also more likely to commit violent crimes (Forbes, Adams-Curtis, Pakalka & White, 2006). In particular, males who participate in aggressive high-school athletics are more likely to commit crimes of aggression than high school students who do not participate in aggressive sports. According to Forbes et al (2006), students who participate in aggressive sports in high school engage in more psychological aggression, physical aggression, and sexual coercion toward their dating partners. This group is also more likely to cause physical injury to partners, be accepting of violence, have more sexist attitudes and hostility toward women, be more accepting of rape myths, and be less tolerant

of homosexuality. In the study conducted by Forbes et al. (2006), aggressive was defined as participation in football, basketball, wrestling, and soccer. Those considered non-aggressive were baseball, golf, cross-country, swimming, track and field, and tennis. In a more recent study of high-school male athletes, 16% reported engaging in abusive behavior in their heterosexual relationship within the past 3 months, with 5% and 15% reporting physical-sexual and emotional abuse, respectively (McCauley et al., 2013). According to the study, “the most commonly reported physical-sexual abuse was ‘convincing her to have sex after she had said no a few times’” (p. 1885).

NCAA alcohol policy. It is important for athletic associations and institutions of higher education to keep student athletes eligible based on both academic performance and social behavior. Therefore, this group is more often exposed to alcohol prevention efforts than their non-athlete counterparts. These prevention and educational efforts are ongoing, and self-reported rates of high-risk drinking has decreased since 2005, but athletes are still at a higher risk for alcohol-related consequences (Druckman, 2015; NCAA, 2014).

Alcohol and other substance use may vary depending on the type of institution as well as the division. Green, Uryasz, Petr & Bray, (2001) and the NCAA (2014) found that students involved in Division III athletics were far more likely to use substances than those in upper divisions. This variance may be explained by Milroy, Orsini, Wyrick, Fearnow-Kenney and Kelly (2014), which stated “Division III consistently rated reasons for use of alcohol significantly higher than DI and DII, whereas DII consistently rated reasons for use significantly lower than DI and DIII, suggesting that reasons for non-use represent a more powerful influence on behavior for Division III student-athletes” (p. 74). In this instance,

the primary reason for drinking among the Division III population was to signify celebration.

According to the NCAA's (2011) "Minimum Guidelines for Institutional Alcohol, Tobacco, and Other Drug Education Programs," programs must be administered at least once per semester in order to reach students who transfer midyear. The guidelines suggest that a program should perform the following:

1. Review/develop individual teams' drug and alcohol policies;
2. Review the athletic department's drug and alcohol policy;
3. Review institutional drug and alcohol policy;
4. Review conference drug and alcohol policy;
5. Review institutional or conference drug-testing programs (if any);
6. Review NCAA alcohol, tobacco, and drug policy including tobacco ban, list of banned drug classes, and testing protocol;
7. View the NCAA drug-education and drug-testing video;
8. Discuss nutritional supplements and their inherent risks;
9. Allow time for questions from student athletes.

Although alcohol and drugs are discussed in only one educational session for college-student athletes, there is no NCAA ban of alcohol use for college-student athletes. The list of banned drugs essentially consists of illegal narcotics, performance-enhancing drugs, and items that contain certain stimulants. Even though alcohol is not an NCAA-banned substance, the association still recognizes its potential risk to athletes. Therefore, it provides opportunities for individual institutions to facilitate their own personalized programs that meet the needs of their campus culture (NCAA,

2011). The Choices Grant is a 3-year, \$30,000 grant that allows institutions of higher education to provide student athletes and campus communities with educational tools intended to help all students make better choices. In addition, the NCAA co-sponsors the APPLE conference, which promotes student-athlete wellness and substance-abuse prevention (University of Virginia, 2006).

According to the NCAA's 2014 Study of Substance Use Habits of College Student Athletes (n=21,225), 80.5% reported drinking alcoholic beverages in the past 12 months. In addition, 63.3% had experienced a hangover, 51.5% had nausea or vomiting, 32% did something they later regretted, 26.1% missed class, 23% got into an argument or fight, 16.7% performed poorly on a test, 13.7% drove under the influence, 30% had memory loss, 12.3% were hurt or injured, and 9% got in trouble with the police, residence hall, or other college authority. Compared to the 2001 and 2005 NCAA surveys, these statistics dropped significantly in all areas. Excessive drinking particularly dropped from 63% to 44%. Overall, 80% of the respondents reported drinking within the past year, which is nearly identical to the 2001 responses.

However, student athletes in NCAA Division III schools consumed alcohol at higher rates than their Division I and II counterparts (NCAA, 2014). This is a notable finding as Division III student athletes do not receive athletic scholarships. Therefore, athletic performance, team participation, or drug test results may not impact a student athlete's ability to remain enrolled at college.

Alcohol and deviant behavior among student athletes.

Among harms listed in the NCAA Study (Green, Uryasz, Petr, and Bray, 2001), college-student athletes were more likely than their non-athlete peers to break institutional policies as well as laws while under the influence of alcohol. While there is reason to speculate that violations may be reported more often due to greater public scrutiny placed on student athletes, the behaviors in the study were self-reported and not a comparison of criminal reports or institutional incident reports. The question at hand is *why*? If college athletes are aware that they are subject to greater public scrutiny than their non-athlete peers, why are they still more likely to drink to the point of intoxication or to the point of consequences that could potentially involve law enforcement?

Being a student athlete is a “brotherhood” in which newcomers must suffer rites of passage (Waldron & Kowalski, 2009). These rites are rationalized by teammates as well as coaching staff as part of building “team cohesion” (Johnson & Chin, 2014). For male athletes, drinking in high quantities through activities such as forced drinking are explicitly intended to prove masculinity of the out-group (those being hazed) while both implicitly and explicitly exhibiting the dominance of the in-group (those doing the hazing; Kimmel, 2009). Alcohol is used as both a recruiting and bonding tool for student athletes.

Revenue Generating Sports versus Non-Revenue-Generating Sports

Student athletes can sense that they are treated differently (Thomas, 2014). At successful programs, their presence brings in greater donors and a new stream of revenue (Vanderford, 2015). Even at moderately successful programs, athletics provides a source of entertainment, institutional bonding, and marketing. The association between money and athletics has made student athletes both a target and a commodity. Resentment can

arise from academic faculty and staff despite athletics boosting revenue (particularly football and men's basketball), because institutional decisions and funding allocations tend to revolve around athletics (DeSchriver, 2009). As argued by Vanderford (2015), student athletes participating in football and men's basketball have a greater reasoning to receive additional compensation because "their respective sports create massive amounts of revenue, publicity, and prestige for their respective schools, unparalleled by other college sports" (p. 835).

For NCAA Division I (FBS) schools and even some Football Championship Series schools, conference realignment tends to revolve around the potential for an increase in revenue generation from football and, to some degree, men's basketball (Groza, 2010). Seeing the potential for an all-around boost, revenue streams may get compounded or primarily compensated through institutional reallocation of funds or subsidies provided by state governments to assist with those programs. A study on Rutgers University by Eichelberger and Young (2012) found that, when student fees and university support through tuition reallocation were combined, every student paid more than \$1,000 to support the athletic department.

Though this study focuses on non-revenue-generating sports, the study's site is an FBS university. The main conferences that receive the majority of revenue in college sports, due to possessing the strongest football programs, are commonly referred to as the Power 5 (Atlantic Coast Conference, Big Ten Conference, Big 12 Conference, Pac-12 Conference, and Southeastern Conference). During the 2014–2015 fiscal year, the athletic departments in the Power 5 conferences earned a record \$6 billion, which is nearly \$4 billion more than the other NCAA schools combined earned (Lavigne, 2016). Though

decisions on conference realignment are made primarily with revenue-generating sports in mind, conference realignment can have a trickle-down impact on the non-revenue-generating sports at these institutions.

Social Ecological Model of Prevention

Multiple studies have found that environmental factors (e.g., peers, family, religion, etc.) tend to have positive or negative effects on health behaviors (Cremeens, Usdan, Talbott-Forbes & Martin, 2013; Quinn & Fromme, 2011). Quinn and Fromme (2011) found that high-sensation seekers from more protective parental environments drank at a highly increased rate compared to their peers once transitioning into college. For college students who drink, the drinking setting can impact the amount of alcohol consumed. Parties that were BYOB (“Bring Your Own Beer”), included drinking games, and had illicit drug use contributed to heavier drinking rates (Ray, Stapleton, Turrisi & Mun, 2014).

Weschler et al. (2002) found that race plays a role in high-risk drinking behaviors in that white students were more likely to drink in greater quantity and frequency than students of color. This trend does not seem to vary among student athletes. Doumas and Midgett (2015) found that white athletes tend to drink greater quantities and at a higher frequency than athletes of color. While there was no discernable difference between the two groups pertaining to drinking motives, students of color reported experiencing alcohol-related problems at a higher rate than white student athletes (70% to 50%, respectively; Doumas & Midgett, 2015). Additionally, athletes of color with higher levels of conformity motives reported the highest levels of alcohol-related problems. This indicates that student athletes of color, in order to fit in, are more likely to drink at high-risk levels to meet the perceived cultural standards of their teams.

The Social Ecological Model (also known as the Socio-Ecological Model) was first developed by Urie Brofenbrenner (1979) to express the relationships among environmental factors on human development. Always exhibited in the form of a stacked Venn diagram, the original progressive layers were *individual*, *microsystem*, *mesosystem*, *exosystem*, and *macrosystem*. The individual layer pertained to demographic factors such as sex, age, and health. The microsystem layer pertained to immediate connections such as family, peers, school, and church. The third layer of mesosystem expressed the connection between the layers. The exosystem layer pertained to influencers such as social services, mass media, and local politics. The final layer, macrosystem, encompassed the attitudes and ideologies of the culture in which the individual lived. This model has been adapted for various arenas of public health and prevention.

In 2002, Dahlberg and Krug utilized a variation of Brofenbrenner's work to develop the Ecological Model for Understanding Violence which, like Brofenbrenner's model, focused on violence prevention and has become the basis for violence prevention for the Centers for Disease Control (CDC) and World Health Organization (CDC, 2015). Unlike the Brofenbrenner (1979) model and the McLeroy, Steckler, and Bibeau models, Dahlberg and Krug's version only housed four factors: *individual*, *relationship*, *organizational*, and *community*. Though Dahlberg and Krug's model is widely utilized in violence prevention, the first published adaptation came from McLeroy, Steckler, and Bibeau (1988) in their work "An Ecological Model for Health Promotion." This adaptation operated on five levels, similar to the original. The first level of the model, individual, identifies attributes of the person at hand. These can include knowledge, attitudes, behaviors, self-concept, and developmental history. The next level,

relationship, focuses on primary groups, both formal and informal social support systems such as family, work groups, and friends. The organizational level includes factors such as organizational characteristics as well as formal and informal rules of operation. The fourth level is community, which focuses on relationships among organizations, institutions, and informal networks defined within boundaries. The fifth and final level is public policy, which emphasizes the local, state, and national laws and policies. As with Brofenbrenner's (1979) model, McLeroy, Steckler, and Bibeau's (1988) version is typically illustrated by a stacked Venn diagram to show the gradation of the relationships among the categories (Figure 1).

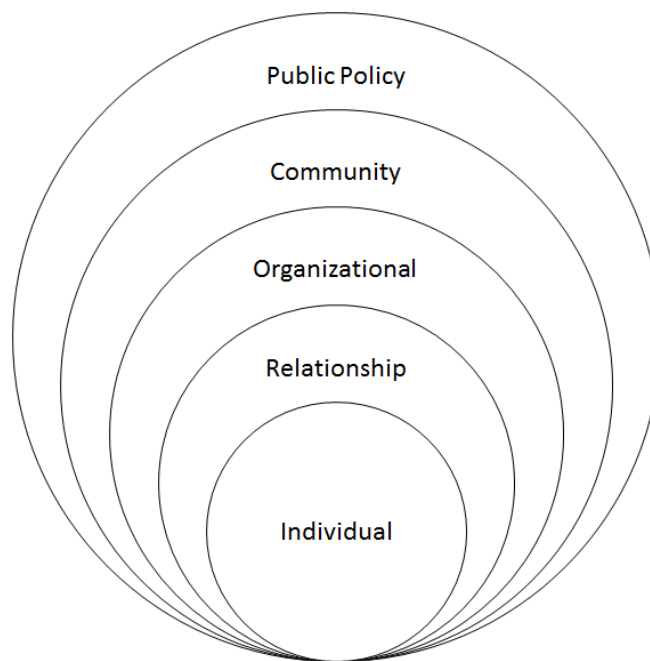


Figure 1. Social Ecological Model of Prevention.

Explanation of Social Identity Theory

Social Identity Theory (Turner, 1982) has served as a complementary theory for explaining group formation, social identification, and social influence (Turner, 1999). It was derived from work by Tajfel, Billig, Bundy & Flament (1971) that focused on social categorization and intergroup relations. Social Identity Theory examines social identity from a macro-level view, examining group formation in a given context and the resulting consequences for the in-group and its members (Tajfel, 1982; Turner, 1982). Tajfel (1982) primarily examined intergroup behavior, including individuals' need for positive regard from their group. Turner (1982) continued with Tajfel's research and theory development, arguing that the basis of Social Identity Theory could be extended to cover group formation. This argument is the basis upon which Turner created Self-Categorization Theory.

Turner's initial extension of Social Identity Theory was called the Social Identification Model (1982). This model postulated that psychosocial group membership was developed from member perceptions (Turner, 1982). At the same time, he created the "Social Cohesion Model," which is based on the assertion that two or more people are either socially or psychologically interdependent on each other in order to satisfy needs and goals or attain validation (Turner, 1982). According to Turner (1982), the first question for group belongingness is not *do I like these other individuals* but, rather, *who am I?* According to the structure of this theory, people can be attracted to a group not because they actually like the group members but because they are attracted to their social status or perception. For a study such as the present one on alcohol use among college students, self-categorization theory assists in explaining how the role of the reference group is brought to the forefront and activated for an individual as it is understood through

measures of conformity and similarity (Turner, 1985). Additionally, self-categorization processes help explain the resolution of ambiguous or uncertain situations by prescribing group norms for attitudes and behaviors (Kalkhoff & Barnum, 2000; Turner, 1982).

According to Tajfel (1978), social identity is “the part of an individual’s self-concept which derives from his knowledge of his membership and a group (or groups) together with the value and emotional significance attached to the membership” (p. 63). Social identity theory can be summarized as the internalization of collective identifications, often stereotypical, and is sometimes a more salient influence on individual behavior than individual identity (Jenkins, 2004). Group membership is meaningful to individuals as a social identity and an overt representation of who one is and the appropriate behavior attached to the group. Group membership encourages and provides basis for discriminating against people in the out-group (those not a member of the belonging group). Devine (2015) stated that individuals are motivated by symbolic ideology “to capture feelings of psychological attachment” to their group (the in-group) while establishing separation from those in the opposing group (out-group; p. 509). With sports, groups tend to form language based around competition to exaggerate the differences between the “in-group” and “out-group” by expressing aggression toward the out-group members and communicating in-group expectancies (Burgers, 2015).

Measuring Social and Athletic Identity

The measurement of social identity is not an easy task. Identity can be vast in range, and people can assume multiple categorized identities such as, for example, a person who is African American, male, a member of a fraternity, and homosexual. Therefore, the most

appropriate tool is something that measures the strength of one category at a time (Tajfel, 1978).

There is a wide variety of tools that attempt to measure identity. The tool I used for this study was the Athlete Identity Measurement Scale (AIMS), which measures the strength of a person's identification with being an athlete. This scale was developed by Brewer et al. (1993) to determine how strongly a person identifies with being an "athlete." The AIMS is modeled similarly to the Identification with a Psychological Group Scale (IDPG; Mael & Tetrick, 1992), which utilizes ten questions to determine the strength of identification with a certain group. Unlike the AIMS, the IDPG is a general identification tool appropriate for a wide range of group-identification studies (Devine, 2015). Reliability analysis of the IDPG revealed a Chronbach's alpha of $\alpha = .77$ (Mael & Tetrick, 1992).

The initial study that developed the AIMS confirmed its validity by surveying 243 undergraduate student non-athletes for an introductory psychology course. Brewer, Van Raalte, and Linder (1990) found (a) unidimensionality of AIMS, through preliminary components factor analysis; (b) support for internal consistency ($\alpha = .93$); (c) test-retest reliability of .89 after 14 days; (d) construct validity of .83 when correlated with a measure of perceived importance of sport competence; and (e) high AIMS scores not being related to socially desirable answers. Testing of the non-athlete sample found AIMS to be a reliable, internally consistent instrument.

A vast array of literature exists on the relationship between college-student athletes and their dangerous drinking patterns. Multiple types of research methods and theories have been used to attempt to understand the enigma that is the culture of collegiate

athletics. By operating under the assumption that group identity shapes identity behavior and perceptions, this research utilized the social identity theory to establish certain characteristics associated with student-athlete (the in-group) identity within the Social Ecological Model of Prevention.

There are obvious limitations to the social identity theory as well as to research performed on college-student athletes. The most glaring issue with any identity-seeking tools is the fact that one person can possess any identities and that each identity can interact with the others in different ways. It was the intention of this study to isolate students with strong athletic or student identities from those whose athlete identities are less strong to determine what role the athlete identity plays in negative or harmful behaviors.

Athletic Identity

As a subsection of social identity, athletic identity among college-student athletes can be not only the strongest area of group identification but also the most difficult to let go. Identity foreclosure, or the commitment to an identity before having meaningfully explored other options, is common among college-student athletes (Beamon, 2012). This can be especially pertinent as college students reside in an environment dedicated to challenging them to develop both personal and social identities (Kaufman, 2014).

The term “athletic identity” was originally coined by Brewer et al. (1993) and defined as the degree to which an individual identifies with the athletic role. This study also found an inverse relationship between age and scores on the Athletic Identity Measurement Scale (AIMS). High levels of athletic identity can have both positive and negative impacts on student athletes. While it may attribute to improved athletic performance and a closer relationship to teammates (Petitpas, 1978), it can also result in

mental disorders such as anxiety due to underperformance, depression when injured, or substance use as a coping mechanism (Carter, 2009; Ford, 2007; Watson, 2002).

In 2003, Miller and Kerr developed a two-stage model of athletic identity formation among college-student athletes and found that the students primarily experimented with three types of roles: *athletic*, *academic*, and *social*. The first stage involved over-emphasis on identification with the athletic role, which resulted in a lower focus on the student role. In this first stage, there was little experimentation with the social role, leaving teammates as the primary arena for socialization. As student athletes continued their time in college, they typically shifted into the second stage, referred to as “deferred role experimentation.” During this time, the student athletes began to realize that their athletic careers would eventually end, resulting in an increased focus on their academic role. This second stage did not typically result in increased experimentation in their social role as long as they remained on the team.

Review of the Literature Chapter Summary

This chapter described the historical and anthropological impact of alcohol on college students in general as well as on college-student athletes, showing the epidemiology and culture that contributes to high-risk drinking and the institutional and team policies created with the intention of curbing dangerous behavior. This chapter also gave relevance to the distinction not only between student athletes and non-athlete peers but also between student athletes participating in revenue-generating sports and student athletes participating in non-revenue-generating sports. Finally, this chapter described the background of the theories that will explicitly (Social Ecological Model for Prevention)

and implicitly (Social Identity Theory) set the foundation for the methods presented in Chapter 4.

Chapter 3: Research Design and Methodology

As with any study addressing health behaviors, an intersection exists between the specified behavior (positive or negative) and other factors such as demographics or group identity. Behaviors can be more effectively impacted through media and other types of communication when they are addressed through social identity (Moran & Sussman, 2014). Comello (2013) posited that an individual's behavior tends to vary based on that person's specific combination and strength of group identities. Moran and Sussman (2014) also acknowledged that the role of social identity in addressing health behaviors is relatively unexplored. This chapter will describe the methods in which the study is designed and provide background on the statistical methods of choice for the research subject.

Methodology Overview

Given its purpose, this study used quantitative data, with an emphasis on correlation and frequency. The independent variables for this study were team environmental factors, team alcohol policies, communication of team alcohol policies, and identity (student and athlete). The dependent variables pertained to high-risk drinking, alcohol-related consequences as identified by the Harvard College Alcohol Survey, and the timing of alcohol use (in-season and off-season). As the purpose of this study was to assist health promotion practitioners by examining through the lens of social identity high-risk drinking as well as alcohol-related consequences among non-revenue-generating student athletes attending a Division I school, the research design was held to primarily descriptive statistics.

Research Questions

Research Question 1: *To what extent do high-risk drinking behaviors and alcohol-related consequences exist among this institution's student athletes who participate in non-revenue-generating sports?*

Research Question 2: *To what extent do factors representing each level of the Social Ecological Model of Prevention (individual, relationship, organizational, and community) exist within this institution's student athletes who participate in non-revenue-generating sports?*

Research Question 3: *To what extent does the perception of team policy fit with high-risk drinking and alcohol-related consequences within the non-revenue-generating sport teams?*

Research Design

Due to the sample population, intention of the study, and low levels of research on this subject, this study utilized quantitative data to focus on distribution frequency and cross-sectional correlation of factors housed within the categories of *individual* (e.g., identity, demographics), *relationship* (e.g., perceived contribution, primary sport of identification), *organizational* (e.g., team success, team alcohol policy), and *community* (e.g., military or Greek affiliation). A graphic of this breakdown can be found in Figure 2.

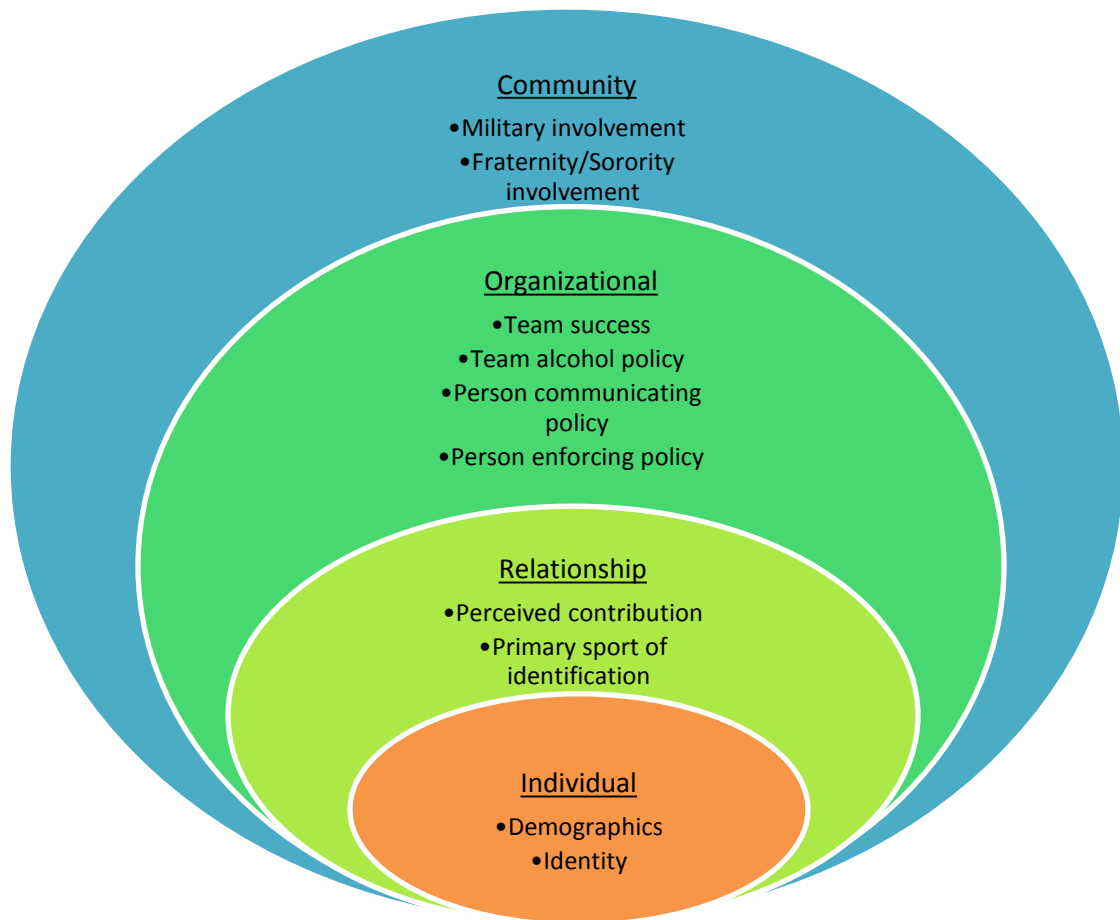


Figure 2. Social Ecological Model of Prevention Among Student Athletes.

The subjects listed under the individual factors are important aspects of the Social Ecological Model of Prevention (SEMP) because they establish the primary groups with which respondents associate. These factors are described by the American College Health Association's (2015), drawing from the CDC (2015), as personal factors that increase the likelihood of a high-risk drinking. Demographic identification such as race, gender, and academic classification year can impact drinking behaviors. Group identities associated with *athletic* (AIMS) and *student* (IDPG) allowed the study to compare relative levels of strength. Both AIMS and IDPG are 10 questions on a 7-point Likert scale. Strategies of

addressing high-risk drinking at this level primarily emphasize challenging personal attitudes and behaviors (ACHA, 2015).

The next level of the SEMP model is relationship, which the ACHA (2015) describes as the “[f]ormal and informal social networks and social support systems including family, work group, and friendship networks.” Division I student athletes’ closest social circle consists of their teammates and coaching staff (Mastroleo et al., 2012); therefore, individuals’ perceptions regarding their teammate (personal contribution) role with their peers and their perceptions of team policy communication, as well as enforcement, fall under this category. Prevention strategies for this level include the development of mentoring and peer programs (CDC, 2015).

The organizational level of the model explores the “social institutions with organizational characteristics and formal (and informal) rules and regulations for operations” (ACHA, 2015). This level seeks to identify characteristics of a setting that is associated with high-risk drinking, which also include team alcohol policies and their communication and enforcement. As indicated by the 2014 NCAA study, the most common reason for drinking among student athletes is to celebrate. Therefore, it is assumed that a more successful team would experience high-risk drinking more often. Additionally, different sports tend to experience varying degrees of high-risk drinking behaviors (Barry et al., 2015; Fuertes & Hoffman, 2016).

The community level involves “[r]elationships among organizations, institutions, and information networks within defined boundaries” (ACHA, 2015). Given that students involved in fraternities, sororities, or the military (Brown-Rice, Furr & Jorgensen, 2015; Herberman et al., 2014) are also considered high-risk populations on the level of varsity

athletes, the compounding of these groups may play a role in a student athlete's drinking behaviors.

These levels of SEMP were run through crosstabs to explore goodness of fit for future studies on how in-season alcohol policies could positively impact high-risk drinking behaviors and alcohol-related consequences within specific teams.

Selection Sample

The study investigated athletes of non-revenue-generating sports attending a Division I Bowl Championship Series athletic department within a large public institution. Despite the most popular and highly-attended sporting events being in men's basketball and football, this institution has had great success in recent history of non-revenue-generating sports such as rifle, women's soccer, women's basketball, and cross country. Success in these sports may positively impact levels of athletic identity. Additionally, because student athletes are more likely to drink to celebrate (NCAA, 2014), successful teams may have greater levels of high-risk drinking.

Instrumentation

The survey for this study was divided into three parts analyzing *Identity, Behavior, and Demographics*. *Part 1: Identity* focused on team environmental factors, athletic identity, and student identity. Athletic identity and student identity were measured by the Athletic Identity Measurement Scale (AIMS) and the Identification with a Psychological Group (IDPG), respectively. These scales assisted the study by determining levels of identity, which is an integral part of the individual factors associated with Research Question 2.

Part 2: Behavior queried students on alcohol-related consequences and high-risk drinking behaviors. The alcohol-related consequences were based on a section from the 2002 Harvard College Alcohol Study. These questions were foundational for this study as they allow for the self-report of student athletes' alcohol use and any associated negative consequences. Data associated with the responses to this section were relevant to Research Questions 1 and 3.

Part 3: Demographics focused on basic demographic subjects such as age, sex, race/ethnicity, current cumulative Grade Point Average (GPA), student classification based on credit hours, and affiliation with other identified high-risk groups (military and Greek letter organizations). This section allowed the study to gather more detailed information on identity-based responses, which supported Research Question 2.

The Athletic Identity Measurement Scale. The Athletic Identity Measurement Scale (AIMS) was developed by Brewer et al. (1993) to determine the strength and exclusivity of athletic identity individuals possessed. Brewer et al.'s study established validity by surveying 243 undergraduate student non-athletes for an introductory psychology course. Since its development, the AIMS has been a central tool in studying athletic-identity foreclosure (Beamon, 2012; Von Robertson & Chaney, 2016), career development of former student athletes (Beamon; Kornspan, 2014), and the study of athlete drinking motives through the utilization of the Athlete Drinking Scale (Martens & Martin, 2009). Brewer, Van Raalte, and Linder (1993) found (a) AIMS being unidimensional through, preliminary components factor analysis; (b) support for internal consistency ($\alpha = .93$); (c) test-retest reliability of .89 after 14 days; (d) construct validity of .83 when correlated with a measure of perceived importance of sport competence; and (e) high AIMS

scores being unrelated to socially desirable answers. Testing of the non-athlete sample found AIMS to be a reliable, internally consistent instrument. Though there have been efforts to improve the 10-point scale over the years (Brewer & Cornelius, 2001), the 10-point model has remained consistent and reliable (Cronbach's $\alpha = .93$) in support for the psychometric integrity (Brewer, Van Raalte, & Linder, 1993). Therefore, this study utilized the original 10-point model of the AIMS.

The AIMS in this study consisted of 10 questions on a 7-item Likert Scale (1 = *strongly disagree* to 7 = *strongly agree*), giving the respondent a maximum possible score of 70 points, indicating the highest level of athletic identity (Figure 3.1). For multi-sport student athletes in this study, the participants were instructed to select the sport with which they primarily identify with and use that as their foundation for answering the AIMS.

Figure 3.

Athletic Identity Measurement Scale

1. I consider myself an athlete.
2. I have many goals related to sport.
3. Most of my friends are athletes.
4. Sport is the most important part of my life
5. I spend more time thinking about sport than anything else
6. I need to participate in sport to feel good about myself.
7. Other people see me mainly as an athlete.
8. I feel bad about myself when I do poorly in sport.
9. Sport is the only important thing in my life.

10. I would be very depressed if I were injured and could not compete in sport.

The Identification with a Psychological Group Scale. The Identification with a Psychological Group (IDPG) scale was developed by Mael and Tetrick (1992) to measure “a feeling of oneness with a defined aggregate of persons, involving the perceived experience of its success and failures” (p. 814). Essentially, it is a method of measuring an individual’s strength of identity within a group, or “social identity.” In similar nature to the AIMS, the IDPG is formed around 10 questions on a 7-point Likert Scale (1 = *strongly disagree* to 7 = *strongly agree*). Respondents with more points indicate a stronger degree of association with the identified group.

Figure 4.

Identification with a Psychological Group Scale

1. When someone criticizes this group, it feels like a personal insult.
2. I don’t act like the typical person of this group (reversed).
3. I’m very interested in what others think about this group.
4. The limitations associated with this group apply to me also.
5. When I talk about this group, I usually say “we” rather than “they.”
6. I have a number of qualities typical of members of this group.
7. This group’s successes are my successes.
8. If a story in the media criticized this group, I would be embarrassed.
9. When someone praises this group, it feels like a personal compliment.
10. I act like a person of this group to a great extent.

The Harvard School of Public Health College Alcohol Study (CAS) was one of the first longitudinal studies on trends in college students' alcohol and drug use. More than 50,000 students attending 119 four-year colleges participated in the 1993, 1997, 1999, and 2001 studies (Wechsler & Nelson, 2008). Beginning in 1992, this study lasted 14 years and provided the framework for researchers focusing on college students' alcohol use and high-risk drinking. The set of questions sampled from the CAS came from question C16, which focused on alcohol-related problems. Studies pertaining to the CAS have found a strong association between high-risk drinking and experiencing the consequences listed in Table 3.3.

Figure 5.

Survey Question 2.7

“How many of the following times has this happened to you while you were drinking or because of your drinking during the last year?”

1. Miss class
2. Forgot where you were the night before
3. Got behind in school work
4. Forgot what you did the night before
5. Argue with friends
6. Engage in unplanned sexual activities
7. Did not use protection when you had sex
8. Damage property
9. Got into trouble with the campus authorities
10. Got into trouble with local police
11. Got hurt or injured

12. Required medical treatment for alcohol poisoning

13. Drive after drinking

Data Collection Procedures

Following IRB approval, data were collected through paper surveys that were sent directly to the site institution's athletics department. The associate athletics director then informed the coaching staff via email of the survey, encouraging them to have their teams take the survey. Within the first week of distributing the surveys, there was very little response. Therefore, the associated director of athletics instructed the graduate students to remind the coaching staff about the surveys by physically going to team meetings to distribute and collect the surveys themselves, which prompted an increase in respondents from roughly 70 to the final number of 228 respondents.

This was considered to be a part of the graduate students' regular responsibilities as they reported to the associate director of athletics' office and not any specific teams. Once completed, the surveys were then returned to the "drop-box" which was located in the main athletic department office by the graduate students. The box was then mailed back to the principal investigator. Some teams were not represented in the sample, but there was no reason provided as to why this was so. The completion of the survey was ultimately at the discretion of the head coaches.

Data Analysis

This study was an exploratory examination of student athletes participating in non-revenue-generating sports for a Division I university. Analysis of the data was performed with SPSS for Windows 23. Quantitative methodology was used through descriptive statistics pertaining to response distribution frequency, variance, standard deviation, and

goodness-of-fit tests for ordinal and nominal variables. Though this study was not intended to determine associations or correlations, the Chi-square test and Somers' d can be utilized to determine whether future studies in this area are necessary.

The first research question focused on drinking behaviors and alcohol-related negative consequences. SPSS for Windows 23 was used to perform the data analysis associated with this question. The tables provided for this question were descriptive, indicating the relationship between sport and in-season drinking (Table 4.1.1), sport and off-season drinking (Table 4.1.2), in-season drinking and gender (table 4.1.3), off-season drinking and gender (Table 4.1.4), and sport and alcohol-related consequences of note (Tables 4.1.5–4.1.8).

Research Question 2 emphasized the frequency distribution of the factors that were represented on the four inner levels of the SEMP (individual, relationship, organizational, and community). For this data, SPSS for Windows 23 was utilized to perform binned cross tabulations. The tables associated with this question included sport type and identity (4.2.1–4.2.3), sport and demographics (4.2.4 and 4.2.5), sport and academic factors (4.2.6 and 4.2.7), and sport-specific factors (4.2.8–4.2.12).

Research Question 3 examined the individual perceptions of team alcohol policies and alcohol-related negative consequences and alcohol behaviors. SPSS for Windows 23 was utilized to perform cross tabulations as well as goodness-of-fit tests. Tables for this question involved goodness-of-fit testing between teams and alcohol-related negative consequences (4.3.1–4.3.3).

Research Design and Methodology Chapter Summary

Chapter 3 provided information regarding the process of the study as it pertained to the research questions. The Research Design section described the purpose of how the research questions addressed the categories of the Social Ecological Model. This chapter also provided information on the selection sample as well as background and reliability of the instruments utilized. Descriptive statistics and goodness-of-fit tests were used to analyze the data and will be reported in Chapter 4.

Chapter 4: Results

The purpose of this study was to assist health promotion practitioners by examining, through the lens of social (or group) identity, high-risk drinking as well as alcohol-related consequences among non-revenue-generating student athletes attending a National Collegiate Athletic Association (NCAA) Division I school. Characteristics common to student athletes (i.e., athletic scholarship, personal in-game contribution, team success) were placed into associated levels of the Social Ecological Model of Prevention (SEMP), providing a better look at which behaviors were more common per level. This study collected the data in December 2013 by distributing a paper survey via graduate students during team meetings. The survey results are presented in this chapter.

Research Question 1: *To what extent do high-risk drinking behaviors and alcohol-related consequences exist among this institution's student athletes who participate in non-revenue-generating sports?*

Research Question 2: *To what extent do factors representing each level of the Social Ecological Model of Prevention (individual, relationship, organizational, and community) exist within this institution's student athletes who participate in non-revenue-generating sports?*

Research Question 3: *To what extent does the perception of team policy fit with high-risk drinking and alcohol-related consequences within the non-revenue-generating sport teams?*

Findings from the study are presented in this chapter in the following manner. The first section will provide the survey response rate. The subsequent sections will each represent a question and will present the information found. The section for Research

Question 1 displays descriptive statistics regarding sport and drinking behaviors as well as alcohol-related negative consequences. The section for Research Question 2 provides frequency distribution of the factors that are associated with and distributed among the four inner levels of the SEMP (individual, relationship, organizational, and community). In the section for Research Question 3, the study examines individual perceptions of team alcohol policies and alcohol-related negative consequences.

Response Rate

There were 228 respondents representing the non-revenue generating sports and 75 who did not respond. Of the 228, there were 58 (25.5%) freshmen, 56 (24.5%) sophomores, 58 (25.5%) juniors, 52 (23%) seniors, and 4 (1.5%) student athletes who did not respond to the year-classification question. The sample consisted of 111 (48.7%) male and 116 (51.3%) female student athletes. The racial and ethnic identities included 25 (11%) Black (non-Hispanic), 184 (81%) White (non-Hispanic), 7 (3%) Hispanic or Latino/a, 1 (.5%) Asian/Pacific Islander, 1 (.5%) Native American, 7 Multiracial (3%), and 3 (1%) who preferred not to answer.

The sports represented by the respondents included 31 of 36 baseball players (14%), 14 of 11 listed women's basketball (6%), 29 of 35 wrestling (13%), 15 of 17 gymnastics (7%), 48 of 56 (21%) of rowing, 10 of 10 (4%) rifle, 20 of 29 (9%) men's soccer, 14 of 22 (6%) women's soccer, 23 of 24 (10%) men's swimming and diving, and 23 of 24 (10%) women's swimming and diving. Five non-revenue-generating teams were not represented in the response group: women's cross country (22 athletes), women's tennis (7 athletes), men's golf (10 athletes), women's track and field (22 athletes), and volleyball (14 athletes). The two revenue-generating teams—men's basketball and football—accounted

for 114 athletes, but they were not part of this study. The response rate to this survey for non-revenue-generating student athletes was 67.5%.

Research Question 1: Drinking Behaviors and Alcohol-Related Consequences

The first step of the study was to find the descriptive statistics for high-risk drinking behaviors (in-season drinking, off-season drinking, and underage drinking) as well as alcohol-related negative consequences adapted from the College Alcohol Study. This step was performed by running a crosstab for frequency in SPSS. For “In-Season Drinking” and “Off-Season Drinking,” the question was asked, “[H]ow many servings of alcohol do you have on a typical drinking occasion (Serving size: 12 oz. of beer, 1.5 oz. (shot) of liquor, 4–8 oz. of wine)?” Respondents were provided the answers of 0 = 0 drinks (I don’t drink); 1 = 1 drink; 2 = 2 drinks; 3 = 3 drinks; 4 = 4 drinks; 5 = 5 or more drinks. For in-season drinking, 21.5% of the respondents reported drinking four or more servings per occasion (Table 4.1.1). For off-season drinking, 38.2% of the respondents reported drinking four or more servings per occasion (Table 4.1.2).

Regardless of the potential factors that can compound the physiological impact of alcohol (e.g., illness, food in system, body fat percentage, family history), consuming four or more servings of alcohol per occasion can increase the likelihood for various alcohol-related negative consequences. These consequences include the list that was provided as part of the College Alcohol Study (Table 3.3). Depending on the sex of the respondents, this could be categorized as “high-risk drinking” which defined as drinking that “typically occurs after 4 drinks for women and 5 drinks for men – in about 2 hours” (NIAAA, 2015). The data from this study also found that, for in-season and off-season drinking, the

percentages of student athletes abstaining from drinking were 46% and 24.9%, respectively.

To examine the rates of high-risk drinking within this population, crosstabs was run to express drinking rates by gender. In relation with high-risk drinking, the study found that 25% of male respondents and 8% of female respondents drank at high-risk levels during the season. During the off-season, 48% of male respondents and 16.5% of female respondents drank at high-risk levels. Additionally, multinomial regression was run to assess whether academic classification impacted high-risk drinking and alcohol-related consequences. The models found that classification held no significance in drinking behaviors.

Table 4.1.1

*Sport * Q8. In-Season Drinking Crosstabulation*

Count		Q8. In-Season Drinking						Total
		0	1	2	3	4	5	
Q1. Sport	Baseball	14	2	6	1	0	8	31
	Gymnastics	6	7	1	0	1	0	15
	MenSoccer	8	3	1	2	4	2	20
	MenSwimDive	7	1	0	3	3	9	23
	Rifle	4	2	2	1	0	1	10
	Rowing	37	2	3	3	2	1	48
	WBasketball	5	1	2	2	0	3	13
	WomenSoccer	6	4	1	1	1	1	14
	WomenSwim Dive	8	4	7	4	1	0	24
	Wrestling	10	2	3	2	4	8	29
Total		105	28	26	19	16	33	227

Table 4.1.2

*Sport * Q9. Off-Season Drinking Crosstabulation*

Count		Q9. Off-Season Drinking						Total
		0	1	2	3	4	5	
Q1. Sport	Baseball	5	0	3	2	2	19	31
	Gymnastics	5	1	4	1	2	1	14
	MenSoccer	3	2	2	3	3	7	20
	MenSwimDive	6	0	1	2	5	9	23
	Rifle	4	0	3	1	0	2	10
	Rowing	16	5	12	9	2	3	47
	WBasketball	5	0	1	2	2	4	14
	WomenSoccer	4	3	3	2	1	1	14
	WomenSwim Dive	7	4	1	9	2	1	24
	Wrestling	1	1	5	1	4	16	28
Total		56	16	35	32	23	63	225

Table 4.1.3

*In-Season Drinking * Gender Crosstabulation*

Q15. Gender				
	No Response	Female	Male	Total
Q8. In-Season Drinking	0	62	43	105
	1	20	8	28
	2	14	12	26
	3	10	9	19
	4	5	11	16
	5	5	28	33
Total		116	111	227

Table 4.1.4

*Off-Season Drinking * Gender Crosstabulation*

Q15. Gender				
Count	No Response	Female	Male	Total
Q9. Off-Season Drinking	0	37	19	56
	1	13	3	16
	2	22	13	35
	3	24	8	32
	4	9	14	23
	5	10	53	63
Total		115	110	225

In this study found, 81.1% of all respondents reported that they had participated in underage drinking at some point in time. The teams that had the most student athletes who drank underage were gymnastics (93.3%), men's soccer (90%), rifle (90%), and wrestling

(89.6%). The team that had the fewest student athletes who had previously drank underage was the rowing team (86.9%).

Table 4.1.5

*Sport * Underage Drinking Crosstabulation*

Count		Q10. Underage Drinking		
		No	Yes	Total
Q1. Sport	Baseball	6	25	31
	Gymnastics	1	14	15
	MenSoccer	2	18	20
	MenSwimDive	3	20	23
	Rifle	1	9	10
	Rowing	15	33	48
	WBasketball	4	10	14
	WomenSoccer	3	11	14
	WomenSwim Dive	5	19	24
	Wrestling	3	26	29
Total		43	185	228

Questions pertaining to the frequency of experiencing alcohol-related negative consequences resulted in the following overall percentages: 16.2% missed class; 21.9% fell behind in school work; 22.4% forgot where they were while drinking; 33.6% forgot what they did while drinking; 30% argued with friends; 27.8% had unplanned sex; 21.5% had unprotected sex; 10.5% got hurt or injured; 12.7% damaged property; 6.1% got into trouble with authorities; and 6.6% got into trouble with police. Running a Chi-Square goodness-of-fit test, the study found significance between sport and “missed class” ($x = .036$), “forgot location” ($x = .013$), “forgot actions” ($x = .001$), “unplanned sex” ($x = .002$), and “unprotected sex” ($x = .012$).

The data relay the fact that these issues occurred but not the severity or the frequency. Upon reviewing which of these alcohol-related consequences occurred three or more times within the past year, only four consequences reached 10% of the respondents: forgot where they were while drinking (10.1%; Table 4.1.6); forgot what they did while drinking (12.7%; Table 4.1.7); had unplanned sex (17.6%; Table 4.1.8); and had unprotected sex (11.9%; Table 4.1.9).

Table 4.1.6

*Sport * Q14b. ForgotLocation Crosstabulation*

Count		Q14b. ForgotLocation				
		1-2 times	3-5 times	More than 5 times	None	Total
Q1. Sport	Baseball	4	3	2	22	31
	Gymnastics	3	0	1	11	15
	MenSoccer	4	0	0	16	20
	MenSwimDive	3	4	3	13	23
	Rifle	2	0	0	8	10
	Rowing	3	1	0	44	48
	WBasketball	1	3	0	10	14
	WomenSoccer	0	0	0	14	14
	WomenSwim Dive	2	1	0	21	24
	Wrestling	6	1	4	18	29
Total		28	13	10	177	228

Table 4.1.7

*Sport * Q14d. ForgotActions Crosstabulation*

Count		Q14d. ForgotActions					
		No Response	1–2 times	3–5 times	More than 5 times	None	Total
Q1. Sport	Baseball	2	7	2	3	17	31
	Gymnastics	0	4	1	0	10	15
	MenSoccer	0	6	1	0	13	20
	MenSwimDive	0	5	7	2	9	23
	Rifle	0	0	2	0	8	10
	Rowing	0	9	1	0	38	48
	WBasketball	0	3	3	0	8	14
	WomenSoccer	0	2	0	0	12	14
	WomenSwim Dive	0	1	3	0	20	24
	Wrestling	0	10	0	4	15	29
Total		2	47	20	9	150	228

Table 4.1.8

*Sport * Q14f. UnplannedSex Crosstabulation*

Count		Q14f. UnplannedSex					
		No Response	1–2 times	3–5 times	More than 5 times	None	Total
Q1. Sport	Baseball	1	6	3	8	13	31
	Gymnastics	0	1	1	0	13	15
	MenSoccer	0	1	3	3	13	20
	MenSwimDive	0	3	4	1	15	23
	Rifle	0	2	0	1	7	10
	Rowing	0	3	2	1	42	48
	WBasketball	0	0	1	0	13	14
	WomenSoccer	0	2	0	0	12	14
	WomenSwim Dive	0	1	1	0	22	24
	Wrestling	0	4	5	6	14	29
Total		1	23	20	20	164	228

Table 4.1.9

*Sport * Q14g. NoProtection Crosstabulation*

Count		Q14g. NoProtection				
		1-2 times	3-5 times	More than 5 times	None	Total
Q1. Sport	Baseball	3	3	7	18	31
	Gymnastics	0	2	0	13	15
	MenSoccer	2	1	1	16	20
	MenSwimDive	4	2	3	14	23
	Rifle	1	0	0	9	10
	Rowing	4	1	1	42	48
	WBasketball	0	0	0	14	14
	WomenSoccer	0	0	0	14	14
	WomenSwim Dive	2	0	0	22	24
	Wrestling	6	3	3	17	29
Total		22	12	15	179	228

Question 2: Social Ecological Model of Prevention Factor Frequencies

Research Question 2 attempted to determine what types of influencers based on the Social Ecological Model of Prevention (SEMP) are most likely to occur.

Individual factors. Individual factors that influence human behavior along the SEMP are those that focus on knowledge, attitudes, behavior, self-concept, skills, and developmental history (McLeroy et al., 1988). For this study, frequency distribution was used to review stated identity, student identity (IDPG score), athletic identity (AIMS score), sex, race, GPA, athletic scholarship, and classification. Types of questions that have been recognized as Individual factors have included demographics and identity (AIMS, IDPG, and Direct). Given the large number of potential scores on the AIMS and IDPG, the scores were binned into 3 levels (Low, Moderate, and High) based on the response range. Even though the ranges of the AIMS and IDPG differed, the overall scales were the same at 0 (minimum) to 70 (maximum). Therefore, there was no need to standardize with Z-scores.

The AIMS and the IDPG scores were placed in bins that ranged from the overall given minimum response (10) to the overall maximum response (70). This allowed for a binning distribution of 20, starting at Low (≤ 30) to Moderate (31–50) and to High (51+). The Chi-square test for AIMS associated with sport indicated significance with a Chi-square value of .005. As reflected in Table 4.2.1, athletic identity determined through the AIMS skewed heavily toward Moderate and High, with 4 (1.8%) of the respondents indicating low levels, 120 (52.9%) indicating moderate levels, and 103 (45.4%) indicating high levels of athletic identity. Student identity, as shown in Table 4.2.2, allowed for a slightly lower skew toward Moderate and High, with 8 (3.5%) indicating low levels, 117

(51.5%) indicating moderate, and 102 (44.9%) indicating high levels of student identity through the IDPG.

By team for the AIMS, those possessing the heaviest levels of athletic identity (greatest percentage in High bin) participated in baseball (61.2%), men's soccer (75%), and wrestling (62.1%). Teams possessing the heaviest levels of student identity participated in gymnastics (60%), men's soccer (50%), rowing (52%), and wrestling (51.7%).

Table 4.2.1

*Sport * AIMS (Binned) Crosstabulation*

Count		AIMS (Binned)			Total
		<= 30	31-50	51+	
Q1. Sport	Baseball	0	12	19	31
	Gymnastics	0	10	5	15
	MenSoccer	0	5	15	20
	MenSwimDive	0	13	10	23
	Rifle	1	5	4	10
	Rowing	3	30	15	48
	WBasketball	0	12	1	13
	WomenSoccer	0	8	6	14
	WomenSwim Dive	0	14	10	24
	Wrestling	0	11	18	29
Total		4	120	103	227

Table 4.2.2

*Sport * IDPG (Binned) Crosstabulation*

Count		IDPG (Binned)			Total
		<= 30	31-50	51+	
Q1. Sport	Baseball	4	13	14	31
	Gymnastics	0	6	9	15
	MenSoccer	0	10	10	20
	MenSwimDive	0	12	11	23
	Rifle	0	8	2	10
	Rowing	0	23	25	48
	WBasketball	1	9	3	13
	WomenSoccer	0	11	3	14
	WomenSwim Dive	1	13	10	24
	Wrestling	2	12	15	29
Total		8	117	102	227

Stated identity refers to the survey question, “Which group do you feel that you identify with the most?” This question indicated significance in goodness of fit as the Chi-square was .006. The potential response was dichotomous: “athlete” or “student.” The purpose of this question was to provide a contrast, through the direct response of self-perceived identity, to the identities reported through the AIMS and IDPG responses. The results from this question (Table 4.2.3) indicated that the vast majority of the students identified with being an athlete ($n = 175$; 76.8%) more than a student ($n = 49$; 21.5%) when asked directly. In all teams, the majority of the student athletes directly identified with their athletic identity more than their student identity. The rowing team possessed the closest to even distribution, with 52% indicating “athlete” and 48% indicating “student.”

Table 4.2.3

*Sport * Q5. Stated Identity Crosstabulation*

Count		Q5. Direct Identity			
		No Response	Athlete	Student	Total
Q1. Sport	Baseball	0	28	3	31
	Gymnastics	0	12	3	15
	MenSoccer	0	18	2	20
	MenSwimDive	2	20	1	23
	Rifle	0	8	2	10
	Rowing	1	25	22	48
	WBasketball	0	12	2	14
	WomenSoccer	0	13	1	14
	WomenSwim Dive	0	18	6	24
	Wrestling	1	21	7	29
Total		4	175	49	228

Next, the study utilized distribution frequency statistics for the remaining individual factors: *sex*, *race*, *GPA*, and *classification*. The results showed an even distribution in the categories of sex and classification. Race skewed heavily toward White (non-Hispanic), which consisted of 80.7% of the respondents. GPA also skewed heavily in one direction, with 71.9% of the respondents possessing a cumulative GPA of over 3.0. The distribution of classification was relatively even from freshman to senior. The classification of graduate-level student athletes was not included in this survey.

Table 4.2.4

*Sport * GPA Crosstabulation*

Count		Q18. GPA				
	No Response	No Response	1.0 to 1.9	2.0 to 2.9	3.0 to 4.0	Total
Q1. Sport	Baseball	1	0	11	19	31
	Gymnastics	1	1	3	10	15
	MenSoccer	0	0	2	18	20
	MenSwimDive	0	0	4	19	23
	Rifle	1	0	3	6	10
	Rowing	0	0	8	40	48
	WBasketball	0	0	5	9	14
	WomenSoccer	0	0	4	10	14
	WomenSwim Dive	0	2	3	19	24
	Wrestling	2	1	12	14	29
Total		5	4	55	164	228

Table 4.2.5

*Sport * Race Crosstabulation*

Count

		Q16. Race									
		No Response	Asian or Pacific Islander	Black (non- Hispanic)	Hispanic or Latino/a	Multi- Racial	Native American	Prefer not to answer	White (non- Hispanic)	Total	
Q1. Sport	Baseball	1	0	1	1	0	0	0	28	31	
	Gymnastics	0	1	1	0	2	0	0	11	15	
	MenSoccer	0	1	2	3	1	0	0	13	20	
	MSwimDive	0	0	0	0	0	0	0	23	23	
	Rifle	0	0	0	0	0	0	0	10	10	
	Rowing	1	0	1	0	2	0	0	44	48	
	WBasketball	0	0	12	0	1	0	0	1	14	
	WSoccer	0	0	1	0	1	0	1	11	14	
	WomenSwim Dive	0	0	0	1	0	1	0	22	24	
	Wrestling	0	0	6	2	0	0	0	21	29	
Total		2	2	24	7	7	1	1	184	228	

Table 4.2.6

*Sport * Gender Crosstabulation*

Count		Q15. Gender		
		Female	Male	Total
Q1. Sport	Baseball	0	31	31
	Gymnastics	15	0	15
	MenSoccer	0	20	20
	MenSwimDive	0	23	23
	Rifle	2	8	10
	Rowing	48	0	48
	WBasketball	14	0	14
	WomenSoccer	14	0	14
	WomenSwim Dive	24	0	24
	Wrestling	0	29	29
Total		117	111	228

Relationship factors. Relationships between student athletes and those in their immediate peer groups highly influence health behaviors. The questions that reflect that level of relational influence of the SEMP pertain to (a) primary sport of identification and (b) personal contribution to team success during competition. Most of the respondents (79.4%) indicated that they contributed in “Some” or “Large” parts to the team during competition. As previously stated, the team sport breakdown was 31 (13.6%) from baseball, 14 (6.1%) from women’s basketball, 29 (12.7%) from wrestling, 15 (6.6%) from gymnastics, 48 (21.1%) from rowing, 10 (4.4%) from rifle, 20 (8.8%) from men’s soccer, 14 (6.1%) from women’s soccer, 23 (10.1%) from men’s swimming and diving, and 24 (10.5%) from women’s swimming and diving.

Table 4.2.7

Sport Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Baseball	31	13.6	13.6	13.6
	Gymnastics	15	6.6	6.6	20.2
	MenSoccer	20	8.8	8.8	28.9
	MenSwimDive	23	10.1	10.1	39.0
	Rifle	10	4.4	4.4	43.4
	Rowing	48	21.1	21.1	64.5
	WBasketball	14	6.1	6.1	70.6
	WomenSoccer	14	6.1	6.1	76.8
	WomenSwim Dive	24	10.5	10.5	87.3
	Wrestling	29	12.7	12.7	100.0
	Total	228	100.0	100.0	

Table 4.2.8

*Sport * Q3. Personal Contribution Crosstabulation*

Count		Q3. Personal Contribution					
		No Response	Large	Little	Some	Zero	Total
Q1. Sport	Baseball	1	13	3	12	2	31
	Gymnastics	1	5	1	7	1	15
	MenSoccer	0	11	3	6	0	20
	MenSwimDive	0	10	3	10	0	23
	Rifle	0	4	2	3	1	10
	Rowing	0	23	5	20	0	48
	WBasketball	0	5	2	4	3	14
	WomenSoccer	0	5	3	5	1	14
	WomenSwim Dive	0	6	5	13	0	24
	Wrestling	0	6	6	13	4	29
Total		2	88	33	93	12	228

Organizational factors. The role an individual plays within an organization and the culture of the organization are key influencers in the individual's behavioral patterns, positive or negative. Among student athletes, the questions that pertained to organizational factors of SEMP concerned team alcohol policy, person communicating the team alcohol policy, person enforcing the team alcohol policy, athletic scholarship, and current team success.

As illustrated in Tables 4.2.11 and 4.2.12, respectively, 12.3% and 13.6% of the respondents indicated that there was no team alcohol policy. Similarly, when asked directly about the in-season alcohol policy (Table 4.2.10), 13.2% of the respondents indicated that there was no alcohol policy.

The response rates for the question regarding who informs the teams of the alcohol policy tended to be coaches or athletic-department staff (40.8%), followed closely by teammates (37.3%). The response rates for the question regarding who enforces the team alcohol policy indicated that teammates were perceived as the primary enforcers (36.4%), with coaches and staff closely following (32.9%). While not an option in the survey, many students circled two answers ("Teammate" and "Coaching staff or Athletic Department administration"). Subsequently, "Both" became its own category in the results; 9.6% of the respondents indicated that teammates and coaches equally informed them of the team alcohol policy, and 17.1% indicated that both groups enforced the alcohol policy. The majority of the respondents (78.9%) also reported that their team had or was having a successful season (Table 4.2.9).

Table 4.2.9

*Sport * Q4. Team Success Crosstabulation*

Count		Q4. Team Success			
		No Response	No	Yes	Total
Q1. Sport	Baseball	5	1	25	31
	Gymnastics	1	2	12	15
	MenSoccer	0	14	6	20
	MenSwimDive	0	1	22	23
	Rifle	0	0	10	10
	Rowing	2	4	42	48
	WBasketball	14	0	0	14
	WomenSoccer	0	0	14	14
	WomenSwimDive	0	1	23	24
	Wrestling	0	3	26	29
Total		22	26	180	228

To gain a better perspective of the sample population, two separate crosstabs were run comparing the two organizational questions to the student athletes' primary sport (Table 4.2.10 and Table 4.2.11). The data indicated that the rowing student athletes served as their own primary informers and enforcers. Men's soccer, gymnastics, baseball, and women's basketball relied heavily on coaching staff or administrators to inform them of the team alcohol policies. Teams that had heavy peer enforcement included men's soccer, men's swimming and diving, and women's swimming and diving. Women's basketball and gymnastics teams indicated that there was no enforcement of the team alcohol policy solely among peers. However, seven members of the gymnastics team reported that both staff and teammates enforced the policy.

Table 4.2.10

*Sport * Q11. In-Season Policy Crosstabulation*

Count		Q11. In-Season Policy					
		No Response	24-Hour	48–72 Hours	No Policy	Zero Drinking	Total
Q1. Sport	Baseball	1	0	1	8	21	31
	Gymnastics	0	0	14	0	1	15
	MenSoccer	0	2	12	0	6	20
	MenSwimDive	0	0	6	1	16	23
	Rifle	0	7	2	1	0	10
	Rowing	4	2	12	1	29	48
	WBasketball	1	1	11	0	1	14
	WomenSoccer	2	1	10	0	1	14
	WomenSwim Dive	1	0	11	0	12	24
	Wrestling	2	1	1	19	6	29
Total		11	14	80	30	93	228

Table 4.2.11

*Sport * Q12. InformPolicy Crosstabulation*

Count		Q12. InformPolicy					
		Both	No Answer	Coach/Staff	No Policy	Teammate	Total
Q1. Sport	Baseball	4	0	18	7	2	31
	Gymnastics	3	1	11	0	0	15
	MenSoccer	4	0	10	0	6	20
	MenSwimDive	3	0	8	1	11	23
	Rifle	0	0	8	1	1	10
	Rowing	1	0	1	0	46	48
	WBasketball	0	0	14	0	0	14
	WomenSoccer	3	0	8	0	3	14
	WomenSwim Dive	2	0	8	0	14	24
	Wrestling	1	0	7	19	2	29
Total		21	1	93	28	85	228

Table 4.2.12

*Sport * Q13. EnforcePolicy Crosstabulation*

Count		Q13. EnforcePolicy					
		Both	No Answer	Coach/Staff	No Policy	Teammate	Total
Q1. Sport	Baseball	6	0	9	10	6	31
	Gymnastics	3	4	8	0	0	15
	MenSoccer	5	0	5	0	10	20
	MenSwimDive	4	0	8	1	10	23
	Rifle	0	0	8	1	1	10
	Rowing	9	0	5	0	34	48
	WBasketball	0	0	14	0	0	14
	WomenSoccer	4	0	7	0	3	14
	WomenSwim Dive	3	0	4	0	17	24
	Wrestling	1	0	7	19	2	29
Total		35	4	75	31	83	228

There was little consistency in perceived team alcohol policies within teams (Table 4.2.11). The teams that had relatively consistent responses among their student athletes were wrestling, men's swimming and diving, rifle, women's basketball, women's soccer, and men's soccer. All but the wrestling team had greater than 65% of their respondents express that their in-season team alcohol policy prohibited drinking anywhere from 48–72 hours before competition. Among the wrestling team, 19 (65.5%) of their 29 members indicated that there is no team policy.

The most drastic differences arose within the rowing team, baseball team, and women's swimming and diving teams. Among the rowers, 29 respondents (60.4%) indicated that drinking was not permitted during the season while 12 respondents (25%) indicated that they were allowed to drink as long as it was not within 48–72 hours before competition. From the baseball team, 8 respondents (26%) indicated that there was no team alcohol policy while 21 (68%) of their teammates indicated that drinking was not allowed during the season. Women's swimming and diving had nearly even numbers of teammates who believed there was a 48–72-hour rule (46%) and teammates who believed there was no drinking permitted during the season (54%).

Table 4.2.13

*Sport * Q2. Scholarship Crosstabulation*

Count		Q2. Athletic Scholarship				
		Full	None	Over Half	Under Half	Total
Q1. Sport	Baseball	1	11	11	8	31
	Gymnastics	9	6	0	0	15
	MenSoccer	4	6	4	6	20
	MenSwimDive	2	4	8	9	23
	Rifle	0	1	3	6	10
	Rowing	7	21	10	10	48
	WBasketball	14	0	0	0	14
	WomenSoccer	4	4	2	4	14
	WomenSwim Dive	0	7	9	8	24
	Wrestling	2	18	8	1	29
Total		43	78	55	52	228

It should be noted that the women's basketball team roster listed only 11 student athletes, but the team had 14 respondents to this survey. However, when reviewing the frequency chart for personal contribution in competition, 3 responded with "Zero" contribution, which may reflect NCAA eligibility status (e.g., "redshirt" or transfer), given that all 14 indicated a full athletic scholarship.

Additionally, the majority of respondents (65.8%) revealed receiving some level of athletic scholarship, with 43% reporting that they received more than half or a full athletic scholarship. Upon running crosstabs, it was found that most of the respondents who received more than half to full athletic scholarships came from women's basketball (14 full scholarships), rowing (7 full, 10 more than half), and gymnastics (9 full; Table 4.2.13).

Community factors. Greek Letter Organizations (fraternities and sororities) and military, similar to varsity athletes, are considered high-risk groups among college students. In this study, there were four student athletes involved in Greek organizations and five student athletes involved in the military. Sports that consisted of student athletes involved in Greek Letter Organizations were women's basketball (3) and rowing (1). Sports with student athletes involved in the military were rowing (2), wrestling (2), and rifle (1).

Table 4.2.14

*Sport * Q17. GreekorMilitary Crosstabulation*

Count		Q17. GreekorMilitary			
		Neither	Greek	Military	Total
Q1. Sport	Baseball	31	0	0	31
	Gymnastics	15	0	0	15
	MenSoccer	20	0	0	20
	MenSwimDive	23	0	0	23
	Rifle	9	0	1	10
	Rowing	45	1	2	48
	WBasketball	11	3	0	14
	WomenSoccer	14	0	0	14
	WomenSwim Dive	24	0	0	24
	Wrestling	27	0	2	29
Total		219	4	5	228

Research Question 3: Policy, Sport, and Drinking

The purpose of Research Question 3 was to determine if there was potential goodness of fit between the factors In-Season Alcohol Policy with high-risk drinking behaviors and alcohol-related consequences while taking sport into account. After running

a crosstab between these factors, four sports stood out as having a goodness of fit as it pertains to policy and alcohol: men's swimming and diving, women's swimming and diving, rowing, baseball, men's soccer, rifle, and wrestling. The men's swimming and diving team had the best Somers' d fit, with four alcohol-related consequences of "Forgot Location" (.448), "Forgot Actions" (.343), "Unplanned Sex" (.661), and "No Protection" (.437). The values associated with the significant Somers' d values demonstrated a positive association, meaning that a more severe perception of policy suggested that these alcohol-related negative consequences were more likely to occur.

Table 4.3.1

Men's Swimming and Diving

				Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
MenSwimDive	Ordinal by Ordinal	Somers' d	Symmetric	.448	.152	2.824	.005
			Q11. In-Season Policy Dependent	.387	.143	2.824	.005
			Q14b. ForgotLocation Dependent	.534	.176	2.824	.005
MenSwimDive	Ordinal by Ordinal	Somers' d	Symmetric	.343	.140	2.410	.016
			Q11. In-Season Policy Dependent	.281	.123	2.410	.016
			Q14d. ForgotActions Dependent	.441	.175	2.410	.016
MenSwimDive	Ordinal by Ordinal	Somers' d	Symmetric	.661	.146	3.600	.000
			Q11. In-Season Policy Dependent	.612	.160	3.600	.000
			Q14f. UnplannedSex Dependent	.720	.151	3.600	.000
MenSwimDive	Ordinal by Ordinal	Somers' d	Symmetric	.437	.176	2.265	.024
			Q11. In-Season Policy Dependent	.388	.166	2.265	.024
			Q14g. NoProtection Dependent	.500	.201	2.265	.024

The baseball team (Table 4.3.2) also fit four alcohol-related consequences with significant Somers' d values: "Trouble with Authorities" (-.176), "Trouble with Police" (-.237), "Got Injured" (-.275), and "Alcohol Poisoning" (-.235). The women's swimming and diving team as well as the rowing team each saw significant Somers' d values after running crosstabs (Table 4.3.3). The women's swimming and diving team saw significance with "Forgot Location" (-.327) and "Forgot Actions" (-.232) while the rowing team had significance with "Argued with Friends" (.309) and "No Protection" (-.176). Men's soccer ("In-Season Drinking" [-.432]), the rifle team ("Off-Season Drinking" [.414]), and wrestling team ("Off-Season Drinking" [-.364]) each had one significant Somers' d value (Table 4.3.4). Aside from the rowing team's "Argued with Friends" and the rifle team's "Off-Season Drinking," most these values were negative, meaning that more regulatory team alcohol policies suggested lower likelihood of experiencing these alcohol-related negative consequences.

Table 4.3.2

Baseball

Sport				Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Baseball	Ordinal by Ordinal	Somers' d	Symmetric	-.237	.065	-2.127	.033
			Q11. In-Season Policy Dependent	-.360	.091	-2.127	.033
			Q14i. Authorities Dependent	-.176	.080	-2.127	.033
Baseball	Ordinal by Ordinal	Somers' d	Symmetric	-.237	.065	-2.127	.033
			Q11. In-Season Policy Dependent	-.360	.091	-2.127	.033
			Q14j. Police Dependent	-.176	.080	-2.127	.033
Baseball	Ordinal by Ordinal	Somers' d	Symmetric	-.275	.068	-2.418	.016
			Q11. In-Season Policy Dependent	-.368	.092	-2.418	.016
			Q14k. Injury Dependent	-.220	.087	-2.418	.016
Baseball	Ordinal by Ordinal	Somers' d	Symmetric	-.235	.064	-2.127	.033
			Q11. In-Season Policy Dependent	-.354	.089	-2.127	.033
			Q14l. AlcPoisoning Dependent	-.176	.080	-2.127	.033

Table 4.3.3

Women's Swimming & Diving and Rowing

Sport				Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Women SwimDive	Ordinal by Ordinal	Somers' d	Symmetric	-.327	.095	-2.000	.046
			Q11. In-Season Policy Dependent	-.554	.105	-2.000	.046
			Q14b. ForgotLocation Dependent	-.232	.117	-2.000	.046
Women SwimDive	Ordinal by Ordinal	Somers' d	Symmetric	-.403	.100	-2.449	.014
			Q11. In-Season Policy Dependent	-.578	.107	-2.449	.014
			Q14d. ForgotActions Dependent	-.310	.128	-2.449	.014
Rowing	Ordinal by Ordinal	Somers' d	Symmetric	.309	.111	2.165	.030
			Q11. In-Season Policy Dependent	.545	.175	2.165	.030
			Q14e. Argue Dependent	.216	.098	2.165	.030
Rowing	Ordinal by Ordinal	Somers' d	Symmetric	-.251	.053	-2.712	.007
			Q11. In-Season Policy Dependent	-.437	.075	-2.712	.007
			Q14g. NoProtection Dependent	-.176	.065	-2.712	.007

Table 4.3.4

Men's Soccer, Rifle, and Wrestling

Sport				Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
MenSoccer	Ordinal by Ordinal	Somers' d	Symmetric	-.432	.174	-2.454	.014
			Q11. In-Season Policy Dependent	-.371	.154	-2.454	.014
			Q8. In-Season Drinking Dependent	-.519	.214	-2.454	.014
Rifle	Ordinal by Ordinal	Somers' d	Symmetric	.414	.195	2.108	.035
			Q11. In-Season Policy Dependent	.343	.167	2.108	.035
			Q9. Off-Season Drinking Dependent	.522	.260	2.108	.035
Wrestling	Ordinal by Ordinal	Somers' d	Symmetric	-.364	.151	-2.280	.023
			Q11. In-Season Policy Dependent	-.326	.144	-2.280	.023
			Q9. Off-Season Drinking Dependent	-.411	.165	-2.280	.023

Chapter 5: Discussion and Conclusions

The purpose of this study was to assist health promotion practitioners by examining, through the lens of social identity, high-risk drinking and alcohol-related consequences among non-revenue-generating student athletes attending a Division I school. First, to accomplish this purpose, associated literature was identified and used to understand a historical and cultural overview of college students' alcohol use, particularly student athletes' alcohol use. Additionally, literature associated with the Social Ecological Model of Prevention framework was obtained to understand its role in health promotion and health behavior modification. The next step was to identify and obtain permission to study a sample of Football Bowl Subdivision, NCAA Division I non-revenue-generating student athletes. The third step was to administer a survey instrument and collaborate with the site institution's athletic department to sample the student athletes. The fourth and final step was to tabulate and analyze the collected data.

Respondents were asked to complete a survey on their high-risk drinking behaviors, alcohol-related consequences, identity levels, athlete-specific characteristics, and demographics. Aside from the questions pertaining to alcohol use and its consequences, all questions used four of the five levels of the Social Ecological Model of Prevention (individual, relationship, organizational, and community) as the foundation.

Discussion on Results for Research Question 1

To what extent do high-risk drinking behaviors and alcohol-related consequences exist among this institution's student athletes who participate in non-revenue-generating sports?

For high-risk drinking behaviors, the study found that, during the athletic season, nearly half (46.1%) of the respondents chose not to drink alcohol. Of those who did drink during the season, 59.8% typically drank at low-risk levels (1–3 servings of alcohol). As indicated in Tables 4.1.3 and 4.1.4, male student athletes participated in high-risk drinking behaviors at a far greater frequency than female student athletes regardless of whether it was in-season or off-season. This was consistent with the findings of the NCAA study (2014) revealing that male, Division I student athletes reported drinking at greater frequency than female student athletes.

During the off-season, the number of non-drinkers for all teams drastically decreased to 24.9%. This can be related to the Milroy et al (2014) study of NCAA athletes, which indicated that the primary reason why female student athletes drank was because “my team’s dry season just ended” (p. 74). Of those who did drink, 49.1% of the respondents typically drank at low-risk levels. When compared to the NCAA 2014 study, respondents in this study reported that, in the past year, 6.1% got into trouble with authorities, 6.6% got into trouble with police (9% got into trouble with police or other college authorities in the NCAA study), and 30% argued with friends (23% argued with friends in the NCAA study).

Compared to Wechsler’s College Alcohol Study (1996) study, the respondents in this study only experienced higher rates in one area: unprotected sex. This is in similar fashion to a study performed by Ragsdale et al. (2012) that found males involved in fraternities—another group considered high-risk for alcohol-related negative consequences in college—are more likely than their non-affiliated peers to engage in unprotected sex ($p < 0.05$). Additionally, there was a drastic difference in the rates of negative academic

impact. In the CAS (1996), 45.5% of the respondents reported missing class due to alcohol, compared to 16.2% in this study. The CAS also reported that 33.5% of the students fell behind in schoolwork due to alcohol while 21.9% of the respondents in this study indicated the same. The schedules of NCAA Division I student athletes are quite rigorous, with many having their entire days planned for them during the season. In most cases, team study hours are required, and unexcused absences are met with strong punishment from the coaching staff. Despite having higher drinking rates than their non-athlete peers, today's student athletes simply cannot afford to have negative academic outcomes due to increased ramifications.

Four consequences impacted 10% or more of the respondents at least three times within the past year: "forgot where you were while drinking" (10.1%); "forgot what you did while drinking" (12.7%); "had unplanned sex" (17.6%); and "had unprotected sex" (11.9%). In essence, the most common high-risk drinking habits revolved around getting "blackout drunk" and the potential for committing a nonconsensual sexual act (or sexual assault).

Getting "blackout drunk" (scientifically regarded as alcohol-induced amnesia) occurs when individuals drink so much alcohol that it impacts their memory formation or storage to the point of short-term amnesia (Lee, Roh, & Kim, 2009). They are still conscious and may even seem relatively sober, but their brains are not maintaining the ability to remember or even think through their actions. Alcohol-induced blackouts can be damaging to the hippocampus, hindering the ability to form long-term memories. Alcohol also negatively impacts the prefrontal cortex, which regulates planning, decision making, and impulse control (Dager et al., 2014).

Within this study, 17.6% of the respondents had unplanned sex while drinking, and 11.9% had unprotected sex while drinking. This is not uncommon behavior among this age group but is still high-risk behavior as it pertains to the contraction of sexually transmitted diseases as well as consent for sexual relations. In a study by Fisher, Worth, Garcia and Meredith (2012) on uncommitted sexual encounters (also known as “hooking up”), 35% of respondents reported having sex while “very intoxicated,” 27% while “mildly intoxicated,” and 9% while “extremely intoxicated.” While negotiating the Campus Sexual Violence Elimination Act (SaVE Act) regulations, the Department of Education drafted the definition of consent as “the affirmative, unambiguous, and voluntary agreement to engage in a specific sexual activity during a sexual encounter” (Kattner, 2015). Though it is possible to engage in consensual sex while intoxicated, there is always the risk for a lack of consent due to the ambiguity brought about by intoxication.

Freshmen are generally considered to be another high-risk sub-population among college students, with 10-20% of this population consuming alcohol at levels reaching two times the high-risk drinking threshold (Borsari, Murphy, & Barnett, 2007). It is asserted that college students tend to mature out of drinking due to increases in responsibility through a transition of social role (Arria, et al., 2016). However, data for this study did not report any significance based upon classification. Upon running a multinomial regression model, there was no classification that showed any level of significance among high-risk drinking behaviors or alcohol-related consequences.

However, upon review of data provided through cross tabulations, there was an increase in high-risk drinking behaviors and negative consequences as classifications increased. Rather than maturing out of high-risk drinking, it was exacerbated as student-

athletes aged. Sophomores tended to experience negative consequences in greater frequency. Sophomore and senior years tended to experience the greatest levels of off-season drinking – in particular, with high-risk drinking behaviors. In-season drinking rates as well as frequencies of experiencing alcohol-related negative consequences increased as student-athletes got older. The only negative consequence that decreased as student-athletes aged was “alcohol poisoning.”

Recommendations in practice. Findings have shown that this is a high-risk population regarding alcohol use and alcohol-related negative consequences, especially during the off-season. There needs to be an increase in student-athlete education on blackout drinking, sexual health, and consent. Additionally, there should be methods to train and encourage teammates to serve as active bystanders with regard to potential acts of sexual assault or violence when statements or behaviors encouraging otherwise are present. The athletic department should utilize the NIAAA’s College Alcohol Intervention Matrix (AIM) to assist with potential methods of addressing high-risk drinking behaviors and alcohol-related consequences that particularly ail its student athletes. As the College AIM divides its methods into Individual and Environmental interventions, these methods can be addressed from the SEMP perspective.

Discussion on Results for Research Question 2

To what extent do factors representing each level of the Social Ecological Model of Prevention (individual, relationship, organizational, and community) exist within this institution’s student athletes who participate in non-revenue generating sports?

Individual level. Along the terms of the Social Ecological Model of Prevention, the study found that, for the individual level, argument exists for the student-versus-athlete

dichotomy of student athletes in non-revenue-generating sports. The scales that measured student identity (IDPG) and athletic identity (AIMS) were nearly symmetrical in responses, giving the impression that, intrinsically, student athletes feel a strong connection with both sides. However, when asked to choose in the survey, far more respondents indicated that they identified more with being an athlete (76.8%).

Responses to demographic questions were unremarkable. At 80.7%, the population was heavily White (non-Hispanic), and the gender breakdown was nearly even (51.3% female; 48.7% male). The one area that relatively stood out was the cumulative Grade Point Average (GPA), of which 71.9% of the respondents had a 3.0 or higher. This may signify that this population places a high level of importance on academic achievement, which is not an uncommon characteristic for collegiate student-athletes. A study by Stegall (2012) found that student athletes had higher grade point averages (3.25) than their non-athlete peers (3.01).

Under the SEMP framework, the CDC (2015) recommended that prevention strategies should involve challenging and promoting beliefs and behaviors that ultimately prevent violence. The College Alcohol Intervention Matrix (NIAAA, 2016) found that highly effective methods of intervention on an individual level include personalized feedback, skills training on alcohol and general life skills, brief motivational interviewing, and online education programs such as AlcoholEdu for College.

For this study, it would be recommended practice to address the successes of student athletes from both the athletic and academic/student perspectives. Despite the fact that, when given the choice between each identity, student athletes generally chose the athletic identity, this study found that the IDPG scale and the AIMS measured nearly

identical levels of identity in each. Additionally, the high GPA for this population suggests a high level of importance in academic success. Administrators should develop personalized feedback based on student athletes' alcohol use and their goals concerning athletic and academic performance by providing them with data that illustrates the negative correlation between high-risk alcohol use and success in those areas.

Relationship level. This level utilized perceived contribution and primary sport of identification as factors. The CDC (2015) has recommended that methods of prevention at this level include mentoring and peer programs designed to reduce conflict, foster problem-solving skills, and promote healthy relationships. Likewise, the CollegeAIM (NIAAA, 2016) found that group-level life skills training possesses moderate effectiveness in preventing high-risk drinking.

Based on responses to this study pertaining to contribution to the team and primary team of involvement, the development of a peer-level mentoring program between upper- and underclassmen may be effective if healthy behaviors and relationships are encouraged and enforced by coaching staff. The primary-sport breakdown provided a closer look into behavioral trends as team policies and cultures can have an impact on behaviors. Some teams experienced high-risk drinking at a greater level than other teams, but those specifics will be addressed in the "Organization Level" of this question and the "Discussion of Results for Research Question 3."

Effective peer mentoring programs work best if the mentors are able to serve as positive role models in action. Based on the drinking rates and experiences of negative consequences among the sample population as student-athletes age, not all upperclassmen should serve as mentors with regard to alcohol use. It may be helpful for coaches and

administrative staff within the athletic department to identify specific upperclassmen that can serve as mentors for the underclassmen in this regard.

The relationship factors indicated that, in most cases, both the teammates and coaching staff were heavily involved in informing students of and enforcing team alcohol policies. Only with women's basketball, the rifle team, and gymnastics did the teammates not play a heavy role in informing each other of the policy. Additionally, these sports also placed a large amount of the responsibility of enforcement on the coaching staff.

Organization Level. The CDC (2015) has recommended that, for the organizational level of the SEMP, prevention strategies typically should be designed to impact the social and physical environment such as by “reducing social isolation [and] improving economic...opportunities.” From an environmental perspective, the CollegeAIM (NIAAA, 2016) found that enforcing existing drinking policies (including drinking age) was more effective. On this level, consistency in alcohol policy information distribution and enforcement are key factors to addressing high-risk behaviors and alcohol-related negative consequences.

With 11 non-respondents to this question, the most popular responses were “48–72-hour rule” (n = 80) and “Zero drinking” (n = 93) during the season. While all teams seemed to have a general consensus on the policies, with a few outliers on each team, the most notable sport response was from the baseball team which had 21 members indicate “Zero drinking” in the season and 8 members indicate that there was no alcohol policy at all. Conversely, the wrestling team had 19 members indicate that there was no in-season alcohol policy while 6 members indicated a “Zero drinking” policy. The dissonance demonstrated in this segment of Research Question 2 reflected findings from Taylor, Ward

and Hardin, (2017) who stated that “it may not be the sports structure, or team emphasis of team sports, but the culture created by the student-athletes and coaches that influences student-athletes’ motivations for alcohol consumption” (p. 69 - 70). Therefore, it is recommended that teams (including coaching staff) directly address and enforce the team alcohol policies.

Community Level. Greek Letter Organization and military involvement were the only two factors of research within the community level of the SEMP. As both of these populations are considered high-risk for alcohol-related consequences and high-risk drinking, involvement in these groups along with being a student athlete could compound the likelihood for experiencing these issues (Brown-Rice et al., 2015; Herberman et al., 2014).

Intersections among organizations impact cultures, behaviors, and perceptions of “in-group” versus “out-group” members. This, in turn, can play a role in health behaviors. NCAA student athletes rarely have the opportunity or want to venture beyond their primary social group of teammates (Harper & Williams, 2013); therefore, student involvement in other activities is not common. In fact, only 3.9% (n=9) of respondents were involved in either of these other organizations (GLO n = 4; Military n = 5). Therefore, prevention strategies based on these two components of this level are not needed or recommended.

Discussion on Results for Research Question 3

To what extent does the perception of team policy fit with high-risk drinking and alcohol-related consequences within the non-revenue generating sport teams?

As indicated in Research Question 2, consistency of information distribution and enforcement of the team alcohol policy should reduce occurrences of high-risk drinking

and alcohol-related consequences. Teams that exhibited the greatest levels of dissonance regarding their policy enforcement and information distribution showed significance in experiencing alcohol-related negative consequences and high-risk drinking behaviors.

For in-season policies and alcohol-related consequences/high-risk drinking behaviors, seven teams found significant fit through Somers' d value: men's swimming and diving with "Forgot where they were" (.448, $p = .005$), "Forgot what they did" (.343, $p = .016$), "Unplanned sex" (.661, $p = .000$), and "Unprotected Sex" (.437, $p = .024$); baseball with "Trouble with authorities" (-.237, $p = .033$), "Trouble with police" (-.237, $p = .033$), "Injury" (-.275, $p = .033$), and "Alcohol poisoning" (-.235, $p = .033$); women's swimming and diving with "Forgot where they were" (-.327, $p = .046$) and "Forgot what they did" (-.403, $p = .014$); rowing with "Argued with friends" (.309, $p = .030$) and "Unprotected sex" (-.251, $p = .007$); men's soccer with "In-season drinking" (-.432, $p = .014$); rifle with "Off-season drinking" (.414, $p = .035$); and Wrestling with "Off-season drinking" (-.364, $p = .023$). The resulting data has provided interesting discussion and potential future research. First, one of the teams with the most dissonance and confusion regarding its actual policy was the baseball team. Incidentally, it was also one of the teams with the most significance in the policy/alcohol crosstabs. It may be in this team's best interest to firmly communicate and enforce its in-season alcohol policies. Even though the wrestling team had more respondents indicate that there was no team alcohol policy and had one of the highest rates of in-season drinking, the team only had one significant factor—off-season drinking rates—which is not impacted by an in-season policy. It could be argued that a consistent environment with clear expectations may be a safer, if not healthier, environment than otherwise.

As with Research Question 1, there were significant levels pertaining to blacking out and sexual health behaviors. In practice, it will be recommended to increase the levels of education pertaining to sexual health, consent, and the physiological impact of alcohol. Some teams—particularly men’s soccer, baseball, and men’s swimming and diving—will need greater levels of attention while others will need a more targeted approach.

Contribution and Recommendations to Practice

Given the findings, the following conclusions from analysis of the findings:

1. There needs to be an increase in student-athlete education on blackout drinking, sexual health, sexual assault, and laws pertaining to consent. Methods are also needed to train and encourage teammates to serve as active bystanders to prevent sexual assault and violence when statements or behaviors encouraging unhealthy, risky, or dangerous actions are present.
2. This institution should utilize the IDPG and AIMS in conjunction with other methods of assessment as a method to gain a better understanding of its student-athletes identities and how those identities relate to their behaviors.
3. Although assessment scales indicate even distribution and strength of student and athletic identities, student athletes more often identify or side with their team over the institution/student body. Therefore, develop programming that promotes the recognition of the student identity such as encouraging student organizational or general student philanthropic involvement such as a Habitat for Humanity build involving student athletes and non-athletes.

4. With information gathered on student-athletes, the Social Ecological Model of Prevention can be utilized to address specific team cultures (to include coaching staff) surrounding alcohol use and team policies.
5. Regulations and policies based on team culture can be effectively implemented during the season if communication and clear expectations are present.
6. Informing teams of in-season alcohol policies and enforcing the policies can and should fall upon both the teammates and the coaching staff. Women's and co-ed teams that experienced the negative consequences the most (women's basketball, gymnastics, and rifle) also indicated that they relied heavily on the coaches to communicate and enforce the team alcohol policies.
7. The men's swimming and diving, women's swimming and diving, and rowing teams should be targeted for more direct intervention as all indicate high levels of peer accountability.
8. Develop a student-athlete peer mentoring program for underclassmen. Due to the response levels of high-risk drinking behaviors, it will be recommended for coaches and athletic department administrators to self-select peer mentors.
9. Specific emphasis on policy and consistency must be communicated from the athletic director to all head coaches and their staff, emphasizing the importance that their roles play on student-athlete drinking culture. Include information on how high-risk drinking can damage teams both on and off of the field.
10. Increase the levels of life skills education as student-athletes mature. The fact that there is no maturing out of high-risk drinking may be indicative of inability to develop healthy mechanisms to cope with stressors. Once their athletic

careers have ended, they will need to learn how to positively handle the stress associated with forfeiting their athletic identities in addition to the stressors that are typically associated with college graduates.

11. The athletic department should adopt the NIAAA's College Alcohol Intervention Matrix (NIAAA, 2016) to assist with potential methods of addressing high-risk drinking behaviors and alcohol-related consequences that particularly ail its student athletes. Drinking behaviors and their consequences can be addressed from the SEMP perspective because the College AIM divides its methods into Individual and Environmental interventions.

Study Limitations

This study has several limitations. First, the sample focuses solely upon the population of one institution, making the results difficult to generalize. Additionally, most non-revenue-generating teams participated in the study, entire teams did not participate, which removes the assessment of entire team cultures. Due to the study's relegation to non-revenue-generating sports, there was little diversity within the sample, which may speak to the lack of diversity among NCAA sports that are not football and men's basketball. The survey was distributed after finals of the fall semester, therefore freshmen respondents who participated in spring sports will likely not be able to provide accurate information regarding in-season and off-season drinking.

Directions for Future Research

First, sexual intercourse and blackout drinking tend to be common practices among this population. It would be recommended to perform regressions specifically focused on

the answers to the CAS questions regarding these two subjects to determine if any correlations exist between those high-risk behaviors and other factors.

Next, greater emphasis could be placed upon the “why” of the responses regarding in-season abstinence. Such a high number of respondents abstained from drinking during the season but failed to do so during the off-season. While this could be attributed to the negative impact of alcohol on performance levels or fear of punishment, there may be other factors that are not taken into account (e.g., increased free-time, increased need for dedicated time with teammates). Another potential question for future research stemming from the data from this study would be whether the drastic decrease in abstinence from drinking during the off-season was due to team alcohol policy or due to the awareness of the physiological impact of alcohol on athletic performance.

Additionally, greater levels of research could be focused on the importance of team policy. While this study recognized the importance of consistency in reducing high-risk behaviors, the types of team policies (whether real or implied) could play a role in the occurrence of these behaviors. This study asked student athletes about their team policies, but their responses were essentially their individual perceptions as evidenced by the variety in responses within individual teams. Future studies could focus on the actual versus perceived policies and which has a truer impact on student athletes’ alcohol consumption.

Given the inception of the Athlete Drinking Scale (Martens & Martin, 2010), the utilization of this tool in conjunction with identity and the SEMP may be the most effective way to identify and address alcohol use in future studies. But studies should move beyond solely building upon this data set and should focus more on what methods work for specific populations, utilizing the SEMP as their foundations. There may be team- or institution-

specific cultural differences that can be added to the current list of factors representing the levels of the SEMP. Human behavior tends to be consistent, but environmental factors (i.e., factors that go beyond the individual and relationship levels) that impact those behaviors are constantly shifting. For student athletes and college students in general, the most impactful level to influence individual behavior remains on the organizational level through group identity. Future studies must recognize the importance of the “micro” by emphasizing the role those relationships can have in improving individual health behaviors.

Summary

This study has illustrated that issues pertaining to high-risk drinking include physiological damage, mental and emotional distress, and personal safety concerns among student athletes. Generally, colleges and universities have taken steps to modify these behaviors through policy development and increase in health-promotion initiatives. Particularly for student athletes participating in non-revenue-generating sports, there may be room for improvement in the development of health promotion and prevention models. This study has found that each team has its own specific issues, behaviors, and culture. Therefore, universal prevention initiatives for student athletes may not be as effective.

The focus of colleges and universities should shift from external to internal assessment by determining the individual and environmental holistic behavioral patterns of their students, which have been proven to be more effective through the CollegeAIM (NIAAA, 2016). For college students, high-risk drinking may get them into trouble with their college or authorities, but it can also be an indicator of a greater underlying issue that needs to be addressed (Cimini, 2015). While it is a profound task for national studies to

review student drinking behaviors on a case-by-case perspective, colleges and universities can more easily do so, which can help them determine what other factors tend to impact high-risk drinking and alcohol-related consequences for their own campuses.

A practical use of this study would be to assist universities in the determination of which methods of alcohol-related prevention to choose for their non-revenue-generating student athletes by having a standardized model of assessment and a standard framework for prevention through the Social Ecological Model of Prevention. The methods described in this study pertaining to the SEMP with an emphasis on student and athletic identity would provide institutions with the ability to address high-risk drinking and alcohol-related negative consequences from a more specified perspective, while maintaining the distinction of evidence-based best practice.

Appendix: Student-Athlete Survey on High-Risk Drinking

Hello,

My name is Andrew M. Smith (drew.smith02@uky.edu) and I am a Ph.D. student in the Educational Policy Studies and Evaluation program at the University of Kentucky. The following survey is a part of my dissertation research project as one of the final steps to obtaining my doctoral degree.

Nearly everyone has different roles – or identities – that they play in life. These identities are developed from things like past/current experiences, relationships with family and organizational/team associations. Identities can also impact people’s actions. For example, your identity as a Division I student-athlete is rare and can lay the groundwork for your experiences both during and after college.

The purpose of this survey is for two reasons: 1) To help understand what impacts your identity as a student-athlete, and 2) to help determine if a relationship exists between identity and any substance-related behaviors. These are behaviors that have been shown to be more common among student-athletes than non-athletes.

Your answers are important to us. Although you will not get a personal benefit from taking part in this research study, your responses may help us understand more about college student-athlete success.

Of course, you have a choice about whether or not to complete the survey/questionnaire, but if you do participate, you are free to skip any questions or discontinue at any time.

The survey/questionnaire will take about 10-15 minutes to complete.

Your responses to this study are anonymous. Additionally, [your institution] will never be identified as the location of the research. Please **do not** write your name on this survey.

If you have questions about the study, please feel free to ask; my contact information is given below. If you have complaints, suggestions, or questions about your rights as a research volunteer, contact the staff in the University of Kentucky Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-9428.

Thank you in advance for your assistance with this important project. We ask that you complete and return this survey within the next seven days. Please return your completed survey to the “Drop Box” located in the office of the Athletic Department.

Sincerely,

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Kentucky*
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Part 1: Team Identity

1. Which sport do you primarily identify with? *(please select only one)*
 - a. Baseball
 - b. Men's basketball
 - c. Women's basketball
 - d. Women's cross country
 - e. Women's tennis
 - f. Wrestling
 - g. Football
 - h. Men's golf
 - i. Gymnastics
 - j. Rowing
 - k. Rifle
 - l. Women's track & field
 - m. Men's soccer
 - n. Women's soccer
 - o. Men's swimming
 - p. Women's swimming
 - q. Volleyball

Please answer the following questions with the team that you selected in Question 1.

1. What is your scholarship level for your primary team?
 - a. Full scholarship
 - b. More than $\frac{1}{2}$ of tuition
 - c. Less than $\frac{1}{2}$ of tuition
 - d. No athletic scholarship
2. How much of a contribution do you feel like you make to your team's success during competition?
 - a. A large contribution
 - b. Contribute some
 - c. Contribute very little
 - d. Zero contribution during competition
3. Do you feel your team had (if fall sport) or is currently having a successful season?
 - a. Yes
 - b. No
4. Which group do you feel that you identify with the most?
 - a. Athlete
 - b. Student

5. When answering the following questions, please refer to how you feel as a **member of the team that you selected in Part 1, Question 1**. Please answer the following questions ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) by circling the appropriate number:

1 2 3 4 5 6 7	I consider myself an athlete.
1 2 3 4 5 6 7	I have many goals related to sport.
1 2 3 4 5 6 7	Most of my friends are athletes.
1 2 3 4 5 6 7	Sport is the most important part of my life.
1 2 3 4 5 6 7	I spend more time thinking about sport than anything else.
1 2 3 4 5 6 7	I need to participate in sport to feel good about myself.
1 2 3 4 5 6 7	Other people see me mainly as an athlete
1 2 3 4 5 6 7	I feel bad about myself when I do poorly in sport.
1 2 3 4 5 6 7	Sport is the only important thing in my life.
1 2 3 4 5 6 7	I would be very depressed if I were injured and could not compete in sport.

6. When answering these questions, please refer to how you feel as a **[XXXX] student in general**. Please answer the following questions ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) by circling the appropriate number:

1 2 3 4 5 6 7	When someone criticizes this group, it feels like a personal assault.
1 2 3 4 5 6 7	I don't act like the typical person of this group.
1 2 3 4 5 6 7	I'm very interested in what others think about this group.
1 2 3 4 5 6 7	The limitations associated with this group apply to me also.
1 2 3 4 5 6 7	When I talk about this group, I usually say "we" rather than "they."
1 2 3 4 5 6 7	I have a number of qualities typical of members of this group.
1 2 3 4 5 6 7	This group's successes are my successes.
1 2 3 4 5 6 7	If a story in the media criticized this group, I would feel embarrassed.
1 2 3 4 5 6 7	When someone praises this group, it feels like a personal compliment.
1 2 3 4 5 6 7	I act like a person of this group to a great extent.

Part 2: Behavior

1. **During the season**, how many servings of alcohol do you have on a typical drinking occasion (Serving size: 12 oz. of beer, 1.5 oz. (shot) of liquor, 4-8 oz. of wine)?
 - a. 0 (I do not drink)
 - b. 1
 - c. 2
 - d. 3
 - e. 4
 - f. 5 or more
2. During the **off-season**, how many servings of alcohol do you have on a typical drinking occasion?
 - a. 0 (I do not drink)
 - b. 1
 - c. 2
 - d. 3
 - e. 4
 - f. 5 or more
3. Have you ever consumed alcohol while underage?
 - a. Yes
 - b. No
4. Please indicate your team's in-season alcohol policy.
 - a. We do not have an in-season alcohol policy.
 - b. No drinking within 24 hours of a competition.
 - c. No drinking within 48-72 hours of a competition.
 - d. No drinking at all in-season.
5. Who informed you of your team's alcohol policy?
 - a. We do not have an alcohol policy.
 - b. Coaching staff or Athletic Department administration
 - c. Teammates
6. Who enforces your team's alcohol policy?
 - a. We do not have an alcohol policy.
 - b. Coaching staff or Athletic Department administration
 - c. Teammates

7. How many of the following times has this happened to you while you were drinking or because of your drinking during the last year?

Use the following code:

0 = None

1 = 1-2 times

2 = 3-5 times

3 = More than 5 times

0 1 2 3	Missed a class.
0 1 2 3	Forgot where you were the night before
0 1 2 3	Got behind in school work
0 1 2 3	Forgot what you did the night before
0 1 2 3	Argue with friends
0 1 2 3	Engage in unplanned sexual activities
0 1 2 3	Did not use protection when you had sex
0 1 2 3	Damage property
0 1 2 3	Got into trouble with the campus authorities
0 1 2 3	Got into trouble with local police
0 1 2 3	Got hurt or injured
0 1 2 3	Required medical treatment for alcohol poisoning
0 1 2 3	Drive after drinking

Part 3: Demographics

1. What is your gender?
 - a. Male
 - b. Female
 - c. Transsexual
 - d. Prefer not to answer

2. What is your race?
 - a. Black (non-Hispanic)
 - b. White (non-Hispanic)
 - c. Hispanic or Latino/a
 - d. Asian or Pacific Islander
 - e. Native American
 - f. Bi- or Multi-racial
 - g. Prefer not to answer

3. Please circle if you are a current member of one of the following groups.
 - a. Fraternity or sorority
 - b. Military (ROTC , reserve, or active duty)
4. What is your current cumulative GPA?
 - a. Less than 1.0
 - b. 1.0 to 1.9
 - c. 2.0 to 2.9
 - d. 3.0 to 3.49
 - e. 3.5 to 4.0
5. What is your current student classification based upon credit-hours?
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior

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